The Historical Short Vowel Phonology of Gaelic

Volume 1

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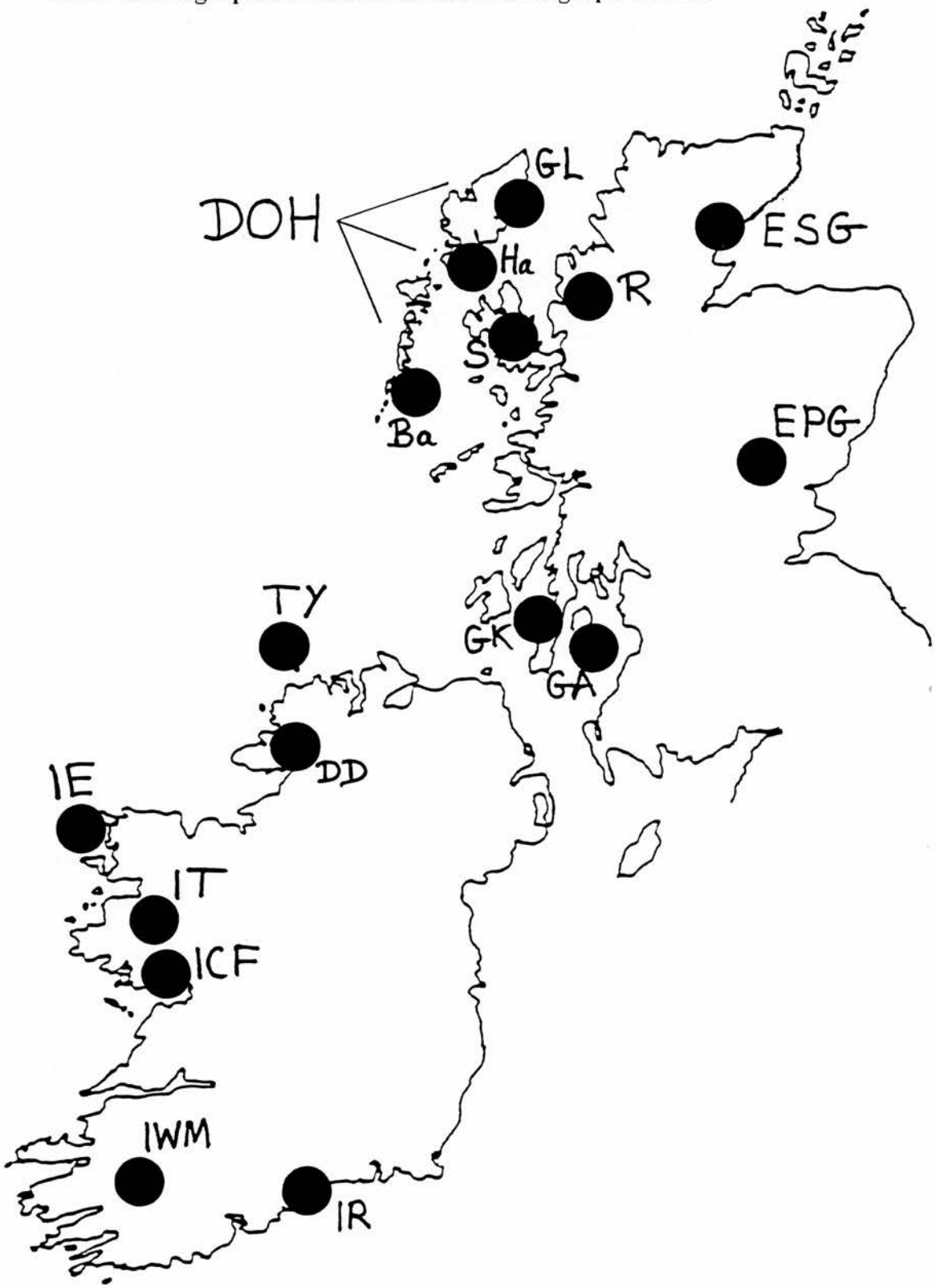
MAP 1: Geographical location of main monograph sources



Declaration

I declare that this thesis is entirely my own work.

Roibeard Ó Maolalaigh
31/3/97

THE UNIVERSITY OF EDINBURGH

ABSTRACT OF THESIS

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Candidate ROIBEARD Ó MAOLALAIGH

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Thesis THE HISTORICAL SHORT VOWEL PHONOLOGY OF GAELIC

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This thesis surveys the historical phonology of short stressed vowels in Irish and Scottish Gaelic by describing and accounting for the major and significant minor developments in the historical short vowel system. As such it provides the first synthesis on any aspect of the historical phonology of Gaelic on a pan-Goedelic basis. Its point of departure is the reconstructed prototosystem of Common Gaelic (CG) from which the short vowel phonologies of a broad representative sample of Irish and Scottish Gaelic dialects are derived and compared. It is a fundamental tenet of the thesis that it is futile to consider the history of Irish or Scottish Gaelic in isolation without taking full cognisance of both varieties. A balanced view of both varieties, each considered on its own merits, provides invaluable insights into earlier stages of the language, which would not otherwise be forthcoming. The thesis focuses on the internal linguistic factors, in particular on the crucial importance of phonological environment, rather than on external linguistic or extra-linguistic factors in seeking to explain individual developments. The dating of particular developments is not a major concern of this thesis.

As a backdrop to the main chapters of the thesis, chapters 1-2 describe (a) the diachronic phonological systems of Gaelic, including an overview of the historical development of the CG consonantal system, and (b) a full discussion of the synchronic vowel phonology of Irish and Scottish Gaelic dialects. The bulk of the thesis, chapters 3-7, is concerned with providing a detailed account, including comparison, of the historical development of each of the CG short vowel phonemes in both Irish and Scottish Gaelic.

Chapter 8 brings together the common trends of development discernible in the short vowel system as a whole. It is concluded that the majority of vowel changes in Gaelic are phonetically conditioned, at least in the initial stages although there is much evidence for analogical developments in individual cases. The structural implications of major developments are discussed such as phonemic mergers, phonemic splits, and possible chain shifts. It is argued that the historical short vowel phonology of Gaelic has to a large extent been determined or affected by four main factors: (a) the position of //a// in the phonological vowel space, (b) the following consonantal environment, particularly marked segments such as velarised and palatalised consonants, (c) the vocalisation of fricatives, (d) compensatory lengthening before originally tense sonorants. Finally, directions for further research are outlined.

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Roibeard Ó Maolalaigh

Source abbreviations

AP	*The Phonemic Analysis of Scottish Gaelic. Based on the Dialect of Applecross, Ross-shire*, E. Ternes
DIL	*Dictionary of the Irish Language. Based mainly on Old and Middle Irish Materials*, Compact Edition, reprinted 1990
DIN	*Foclóir Gaedhilge agus Béarla. An Irish-English Dictionary*, P. S. Dinneen
DT	*The Dialect of Torr, Co. Donegal*, A. Sommerfelt
Dwelly	*The Illustrated Gaelic-English Dictionary*, E. Dwelly
DD	*A Dialect of Donegal*, E. C. Quiggin
DOH	*The Dialects of the Outer Hebrides*, C. Hj. Borgstrøm
EDGL	*An Etymological Dictionary of the Gaelic Language*, A. MacBain
EPG	*East Perthshire Gaelic*, M. Ó Murchú
ESG	*East Sutherland Gaelic*, N. Dorian
FGB	*Foclóir Gaeilge Béarla*, N. Ó Dónaill
GA	*The Gaelic of Arran*, N. M. Holmer
GCF	*Gaeilge Chois Fhairrge*, T. de Bhaldraithe
GK	*The Gaelic of Kintyre*, N. M. Holmer
GL	*The Gaelic of Leurbost*, M. Oftedal
Gléacht	*Foclóir Uí Dhomhnaill ar Ríomhaire: Gaeilge-Béarla / Béarla-Gaeilge*, C. Ó Dochartaigh and P. Ó Maoilreanaigh
GOI	*A Grammar of Old Irish*, R. Thurneysen
GT	*Gaeilge Theilinn. Foghraidheacht, Gramadach, Téacsanna*, H. Wagner
GUD	*Gàidhlig Uidhist A Deas*, G. Mac Gill-Fhinnein
ICF	*The Irish of Cois Fhairrge, Co. Galway*, T. de Bhaldraithe
IDPP	*Irish Dialects Past and Present*, T. F. O'Rahilly
IE	*The Irish of Erris, Co. Mayo*, É. Mhac an Fhailigh
IR	*The Irish of Ring, Co. Waterford*, R. B. Breatnach
IT	*The Irish of Tourmakeady, Co. Mayo*, S. de Búrca
IWM	*The Irish of West Muskerry, Co. Cork*, B. Ó Cuív
LASID	*Linguistic Atlas and Survey of Irish Dialects*, H. Wagner
LEIA	*Lexique Étymologique de l'Irlandais Ancien*, J. Vendryes
PDSG	*A Pronouncing Dictionary of Scottish Gaelic. Based on the Glengarry Dialect*, H. C. Dieckhoff
SR/S/R	*The Dialects of Skye and Ross-shire*, C. Hj. Borgstrøm

TY	*A Phonetic Study of the Irish of Tory Island, Co. Donegal*, J. N. Hamilton

Other abbreviations

acc	accusative
Ba	dialects of Barra, Outer Hebrides
C	consonant
C'	palatalised consonant
Con	Connacht
G	genitive
D	dative
DIS	disyllabic
Don	Donegal
DP	diphthongisation
F	fricative
FUT	future
Ha	dialects of Harris, Outer Hebrides
hom	homorganic
IMP	imperative
lab	labial
LN	lengthening
MON	monosyllabic
Mun	Munster
N	nominative
nas	nasal
pal	palatal(ised)
PAST	past tense
pl	plural
pn	place-name
PRES	present tense
PRT	pretonic
Q	question
R	dialects of Ross-shire
S	dialects of Skye
ScG	Scottish Gaelic
sg	singular

CG Common Gaelic

son	sonorant
SON	tense sonorant
svar	svarabhakti (syllable)
Uls	Ulster
V	vowel
vb	verb
vel	velar
vn	verbal noun

Abbreviations for speakers and dialect areas follow the use of individual monograph sources. Abbreviations for manuscript and printed sources follow those of the *Dictionarry of the Irish Language* (DIL).

Symbols

Phonetic symbols used follow the IPA with the common adaptations used in Gaelic studies, such as ' for palatalisation, L N R (and also M) for tense sonorants. Other symbols used are:

-	hiatus
~	contrasts with *or* varies with
≈	corresponds to
↔	partial merger
// //	CG phoneme
/ /	synchronic phoneme
[ ]	phone
{ }	word class *or* morpheme
/	in the environment of
\	or
C __	following C
__ C	preceding C
>	becomes, changes to
>>	occurs more frequently than
<	derives from, descends from
→	becomes, changes to
⇒	implies (used of implicational relationships)

--	not attested (usually in tables)
+	morpheme boundary
#	word boundary
*	hypothetical, unattested; also used to represent a string of consonants or vowels or any combination of these
M	tense labial sonorant
Ø	zero
?	uncertain
⊃	more sonorous than

Contents

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Introduction

1 Background

The subject of this thesis is the historical phonology of short stressed vowels in Gaelic. Although much work has been done on Gaelic dialects in general, the historical phonology of Gaelic is a desideratum for Gaelic Studies as well as other disciplines (MacAulay 1979: 127). The present thesis provides the first synthesis of the historical vowel phonology of Gaelic dialects based on a pan-Goedelic study of modern Gaelic dialects. This is not to say that the field of historical phonology is an untilled field. On the contrary, the majority of monographs on Gaelic dialects present synchronic descriptions of individual dialects set against the historical backdrop of earlier stages of the language. This dual approach to the study of the modern languages evolved primarily from advances made in the field of historical linguistics during the nineteenth century. In the case of Gaelic, as with other languages, it was believed that the thorough investigation of its dialects would elucidate earlier forms of the language (Quiggin 1906: v; Bynon 1977: 183). As the codes and mysteries of Old and Middle Irish began to be solved and unravelled, Gaelic dialect studies gradually emerged as a discipline in itself. The Dublin Institute for Advanced Studies' monograph series on Gaelic dialects, which began in the mid 1940s, adopted a dual approach to the study of Gaelic dialects. Henceforth phonological descriptions of Gaelic dialects were to be presented in two halves; the first half devoted to synchronic description, the second to historical development. In these studies in particular we have the seeds of the discipline of Gaelic historical phonology, e.g. IWM, IR, ICF, IT, IE, GA, GK. What they provide is effectively mini-historical phonologies for individual dialects. It was no doubt envisaged by the then Director of the Institute, T. F. O' Rahilly, that these monograph studies would one day form the basis of a more general study of the historical phonology of Gaelic. That this *magnum opus* has not been attempted to date is due to a number of reasons. It may, for instance, partly be due to the intermittent publication of these monograph studies from the 1940s onwards. However, the promise of a survey of ScG dialects from the 1950s onwards, whose orientation was specifically historical, no doubt also delayed progress (see Jackson 1958). The historical dimension to dialect studies continued until 1970 with the publication of IT but was abandoned in subsequent monographs such as ESG and EPG where the linguistic description is solely synchronic.

The time is now ripe for a general survey of the historical phonology of Gaelic dialects. The methodology and theoretical orientation of Gaelic dialectology has

changed fundamentally with the publication of ESG and EPG. It would appear that the heyday of the traditional monographs published by the Dublin Institute for Advanced Studies has now passed. It is unlikely that monographs with their style and layout will ever be published again (e.g. IWM, IR, ICF, IT, IE, GA, GK). Similarly, it is improbable that monographs along the lines of Borgstrøm's studies of the Outer Hebrides (1937, DOH, S, R) will ever be reproduced. Since the limited corpus of such traditional studies is unlikely to increase significantly in the future, it is appropriate that scholarship in the field of Gaelic historical phonology be synthesised and analysed at this juncture.

There are gaps in our knowledge of both Irish and ScG dialects. Detailed knowledge is irretrievably lost of certain Irish dialects such as East Ulster and Leinster (see Hughes (1994), Williams (1994)), and ScG dialects such as Galloway. However, the publication of the *Survey of Gaelic Dialects* will add considerably to our knowledge of certain ScG dialects, particularly those in Argyllshire and central Highland areas. Despite some inevitable gaps in our knowledge, it is hoped that this study will prove useful as a framework against which the historical phonologies of hitherto undescribed dialects may be discussed, whether based on future field research or on the materials of the Gaelic Survey itself. Furthermore, this thesis is intended as the first stage of future research in the field of Gaelic historical phonology and morphology. As such it starts with an investigation of one of the most important units of Gaelic phonology, i.e. the short nuclei of stressed syllables.[1]

2 Focus

Although the present study confines itself to a consideration of the historical short vowel phonology of Gaelic, the original focus of this study was much broader and overly ambitious. The intention was to provide a synthesis and analysis of the main consonantal and vocalic (both long and short) phonological developments in Gaelic. As work progressed, it became patently clear that an extensive treatment of all main aspects of the historical phonology of Gaelic would result in a thesis of inordinate length. It also became clear that the phonology of long vowels and consonants, in contradistinction to short vowels, has remained relatively stable over time throughout

[1]The short vowel phonemes of Gaelic are arguably the primary units of Gaelic phonology. As well as forming the nucleus of syllables, they can be seen as primary in another sense. All long vowels and diphthongs can be said to consist of sequences of short vowels or short vowels plus the feature of length in the case of long vowels. This by no means implies that what we shall have to say here regarding short vowel phonology necessarily applies to all long vowels or diphthongs.

the Gaelic speaking areas. Because of their relatively short duration and consequent susceptibility to change, short monophthong vowels in Gaelic provide more scope for historical investigation. As a result of their intrinsic instability and their tendency to assimilate in quality to the consonantal environment, the development of the short vowels provides a valuable insight into the interaction which may occur between vowel and consonant systems. Indeed, the development of the short vowels cannot be understood in isolation, without reference to the development of the consonantal system. For this reason a brief sketch of the historical phonology of the CG consonantal system is provided in chapter 1. We shall also see how the development of the short vowels can provide important information on historical allophonic distribution and variation in both the CG vocalic and consonantal sytems.

3 Approach

3(a) Common Gaelic

The starting point for this study is the protosystem of Common Gaelic (CG) which I take to be a theoretical linguistic construct from which the modern dialects can be derived. Our definition of CG as a protosystem from which the modern dialects may be plausibly derived is not defined temporally, geographically or socially, although we do not deny that the CG protosystems, discussed in chapters 1 and 2, reflect reality at certain periods during the history of the Gaelic language(s). Our starting point has more affinities with the the earliest monograph studies of Irish dialects, and ScG dialects generally, which take Old Irish as the point of departure. For instance, if we are to include the raising of original //a// in words like *caileach* > *coileach, gaid* > *goid, caire* > *coire* etc., it is necessary to speak in terms of an original CG //a// which is attested in Old Irish sources.

Other scholars, particularly Jackson (1951), have developed a concept of Common Gaelic which purports to have a firmer base in reality. Common Gaelic, according to Jackson, was the common language spoken by the Gaels of Ireland, Man and Scotland up until the 12th and 13th centuries. O'Rahilly (IDPP: 258) hints at a similar notion when he speaks of Irish and ScG emerging 'from the ruins of the common literary Gaelic'. Although there is good evidence for the existence of a common literary language in use throughout Ireland and Scotland during the Early Modern period, it is unlikely that there ever existed a common vernacular language in the terms described by Jackson. Recent scholarship has illustrated that many of the distinguishing features between Irish and ScG must have their origins in the Old or Middle Irish period (Ó Buachalla 1988, Ó Maolalaigh 1995/96, Ó Sé 1996), thus

seriously questioning the validity of the theory of Common Gaelic as set out by Jackson.

Previous Irish scholarship in particular has on the whole accepted that the collapse of Common Gaelic occurred following the establishment, by the beginning of the twelfth century, of the linguistic norm known as Classical Irish. Consequently, the phonology of the modern dialects has consistently been derived from or traced back to what is perceived to have been the phonology of Classical Irish. In other words the modern Gaelic dialects are derived from an earlier stage of the language dated to approximately 1200, see IWM: 96.[2] This rather late date for the existence of a common phonological system poses a number of problems for the historical linguist. For instance, if, as we suggest, in chapter 8, that the elaborate vowel system of ScG may have been influenced, however marginally by Norse, then it follows that the ScG vowel system may have been fundamentally different from that of Irish before 1200. Similarly, this late starting point has the disadvantage of excluding from the historical phonology certain developments which occurred in the interim between the Old and Classical periods, such as the raising of original //a// already referred to above in words like *caileach, gaid, caire* etc. Furthermore, the acceptance of what Hamp (1953) refers to as 'the conventional orthographic fiction' of Classical or Early Modern Irish can lead to some incredulous derivations, e.g. /əi'ru:/ is derived from *adhradh* with final *-adh* which is impossible for a Munster dialect (IWM: 27); /nə ge:r'əx/ is derived from *na gcaorach* (IR: 9); /kiv'in'/ from *cumhain* (IE: 229). It will be seen from this small representative sample that the majority of incorrect derivations err on the side of morphological derivation. The historical descriptions contained in these monographs are based on the implicit hypothesis that the only changes which had taken place between CG and the modern local form were phonological ones.[3] We illustrate that simple direct phonological relationships between CG and the modern dialects are not sufficient to account for all the data.

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[2]Cf. IR: x, ICF: xi. Mhac an Fhailigh states that the 'classical historical spelling — when it is available — is added for the purpose of identification of words' (IE: xiv).

[3]Bynon (1977: 184-5) notes that this hypothesis was a fundamental premise of early dialect investigations in Europe generally. To be fair, attention is on occasion drawn to possible analogical developments, e.g. *'tabhairt* which is **tu:rt'** on the analogy of *tiubhrad'* (IWM: 114, n. 1).

3(b) Pan-Goedelic

Just as CG is our starting point, the modern Gaelic dialects represent the farther end of our historical continuum.[4] A pan-Goedelic approach encorporating both Irish and ScG is adopted. Only the ensemble of individual dialects can reveal the overall patterns and tendencies of development in the Gaelic languages (cf. Bynon 1977: 189). Manx dialects have not been referred to in the core chapters (3-7) for practical reasons, the main ones being (i) the absence of a monograph on a single dialect or dialect area of Manx and (ii) the difficulty of comparing the mass of raw phonetic Manx data to the phonological data of Irish and ScG dialects. Reference is, however, made to Manx developments, where relevant. The importance of the pan-Goedelic approach to Gaelic historical linguistics was recognised by O'Rahilly:

> So closely are the three Gaelic languages allied that it would be futile to investigate the history of any one of them without taking full account of the other two. (IDPP: x-xi)

Although the evidence of Manx is crucial for a full understanding of the development of Gaelic generally, we take the view that a consideration of the larger geographical areas of Ireland and Scotland is sufficient in order to establish the main tendencies of phonological development in Gaelic. Despite O'Rahilly's early pronouncement on the importance of a pan-Goedelic approach, the ScG dimension has all too frequently been ignored. The heavy reliance on Irish in Gaelic historical linguistics provides a restricted and distorted view of the development of the Gaelic languages (Ó Maolalaigh 1995/96). We shall see how the conservative nature of ScG phonology can provide invaluable insights into earlier stages of the language, including Irish, and into Gaelic historical phonology in general. For instance, we can observe certain sound changes in progress in ScG which have been long since completed in Irish, e.g. the lowering of original //e// and the fronting and unrounding of //u//, see chapters 4 and 6 below.

4 Aims and objectives

The aim of this thesis is to discover and analyse the major and minor phonological developments[5] of the CG short vowel system, in terms of phoneme inventory, merger, split, distribution and incidence. We aim to establish and describe the phonological environments in which individual changes took place and, where relevant, to define

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[4]On the importance of modern dialects to historical description, see Bynon (1977: 183).
[5]On the use of the terms major and minor in this thesis, see below.

broadly the geographical limits of particular developments. This thesis is not concerned with the absolute or precise dating of such changes, only with establishing the linguistic nature of such changes, although chapter 8 offers some clues for chronological ordering in individual cases. By confining our discussion of developments in the vowel system largely to phonological environments, we hope to exhaust the possible internal linguistic factors behind such changes. By so doing, we do not deny that these developments may have been conditioned by other factors, such as social or stylistic motivations, or indeed substratum influence.[6]

5 Choice of sources used in the present study: rationale

This study has sought to be representatively inclusive rather than comprehensive in its choice of primary sources. With a wide-ranging choice of sources available, selection was inevitable, necessary and indeed desirable in some cases. Given that this study is based on a corpus which is necessarily limited and restricted, the observations presented should be viewed accordingly. In choosing our sources, the following guiding principles were followed wherever possible:

(1) a representative sample is required which reflects the diversity of modern Gaelic dialects
(2) the main dialect areas in both Ireland (Munster, Connacht, Ulster) and Scotland (central and peripheral)[7] should be covered
(3) only published monographs containing substantial amounts of phonological data should be included[8]
(4) phonemic-phonological studies should be favoured, where possible, to purely phonetic studies
(5) phonetic studies whose phonetic symbols are not readily and unambiguously transferrable to phonemic units should be excluded
(6) where possible a set of monographs which are mutually comparable should be chosen

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[6]For a socio-linguistic historical approach to language variation within a particular speech community over time, see Romaine (1982).
[7]On the use of terms central and peripheral, see Jackson (1968).
[8]This principle was necessary given our aim to establish the exact phonological conditions for developments in the vowel system.

Principle (3) automatically excludes unpublished theses such as Ó Dochartaigh (1972), Ó Sé (1982) and Grant (1987) and brief or summary accounts such as Sommerfelt (1927, 1929), MacBain (1892), Robertson (1897, 1898, 1899, 1907), Watson (1986), Mac Gill-Fhinnein (1966). Principle (3) also excludes monographs such as Ó Searcaigh (1925), Holmer (1938, 1940, 1942, 1962, 1965) and Ternes (1973) as primary sources. Principles (4) and (6) exclude Sjoestedt (1931) in favour of IWM, IR; similarly they exclude Finck (1899), Ó Máille (1927) and Stockman (1974) in favour of ICF, IT, IE, see below. Principle (5) excludes such studies as Wagner (1979) and more importantly, the material from the *Linguistic Atlas and Survey of Irish Dialects*.[9] Principle (5) unfortunately also excludes PDSG which represents the most substantial phonological corpus for any ScG dialect area.[10] DOH has been chosen in favour of Borgstrøm (1937) according to principle (1).[11] More sources have been chosen for ScG mainly because of the larger geographical area to be covered. Based on the principles set out above, the following sources have been chosen for the purposes of the present study:

Irish

Munster:	*The Irish of West Muskerry, Co. Cork*	IWM
	The Irish of Ring, Co. Waterford	IR
Connacht:	*The Irish of Cois Fhairrge, Co. Galway*	ICF
	The Irish of Tourmakeady, Co. Mayo	IT
	The Irish of Erris, Co. Mayo	IE
Ulster:	*A Dialect of Donegal*	DD
	A Phonetic Study of the Irish of Tory Island	TY

[9]LASID is used here, however, to exemplify certain developments. It is unfortunate that Wagner did not subject his raw phonetic data to a certain amount of structural analysis, since this source, being largely the work of one scholar, would have the obvious advantage of providing a corpus which was internally compatible for cross-dialectal comparison. For problems associated in interpreting the raw phonetic material contained in Wagner's (1958, 1964, 1966, 1969) Atlas, see Ó Murchú (1967: 208-9).

[10]Dieckhoff's PDSG is based on the so-called dialect of Glengarry which represents a fairly extensive area in south-west Inverness-shire: 'The name Glengarry is used in this work not only in reference to the country between Invergarry and Loch Quoich, but also to the district between Loch Hourn and Loch Nevis, and likewise to a part of the Great Glen of Scotland ending at Invergloy in the west, and in the east at Fort Augustus.' (Dieckhoff 1932: xii). A more fundamental objection to this work is the uncertainty which pertains to the phonemic interpretation of certain vowel sequences. We are told that the vowel sequences in *ceann, call,* written [èu], [au] respectively are disyllabic (p. xiii). On the other hand, the vowel sequences in ceannsaich, calldachd are [ä(au), (au):] respectively, the former representing some sort of a triphthong (p. xiii), the latter 'one united sound', indicated by round brackets (p. x). I am at a loss to reconcile these forms and consequently am unable to interpret them phonemically.

[11]See below for further discussion on the choice of DOH.

ScG

Lewis:	*The Gaelic of Leurbost*	GL
Outer Hebrides:	*The Dialects of the Outer Hebrides*	DOH[12]
Skye:	*The Dialects of Skye and Ross-shire*	S
Ross-shire:	*The Dialects of Skye and Ross-shire*	R
Kintyre:	*The Gaelic of Kintyre*	GK
Arran	*The Gaelic of Arran*	GA
East Sutherland:	*East Sutherland Gaelic*	ESG
East Perthshire	*East Perthshire Gaelic*	EPG

This list requires some comment since the reason for the inclusion of particular sources and the exclusion of others may not be immedietely clear.

Irish

Clearly the main dialect areas are well represented. In the case of Munster, Connacht and Ulster dialects a number of sources have been selected on the grounds that they represent significantly different varieties in each case. Two sources have been chosen to represent the dialect area of Munster. IWM represents west Munster dialects, IR the phonologically quite distinct dialects of east Munster. Similarly, three sources have been chosen to represent Connacht dialects. ICF represents south Connacht dialects which are markedly different in a number of respects from other Connacht dialects. IT and IE, though fairly similar in phonological terms have been both included in order to provide as complete a picture as possible of mid and north Connacht dialects.[13] We have already noted that Holmer's (1962, 1965) study of Clare dialects has been omitted here on the grounds that it contains an insufficient amount of phonological data.[14]

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[12]For the puposes of the present study, DOH refers only to the description of the southern Outer Hebridean dialects of Harris, North Uist, Benbecula, South Uist and Barra, as described in the latter half of *The Dialects of the Outer Hebrides* (DOH: 127-269) which is in fact based mainly on the dialect of Barra.

[13]IT and IE do, however, differ in other respects, mainly morphological. A further reason for the inclusion of both is that there are slight differences in the phonemic analysis which both offer. IT is slightly more economical in its description, especially of the mid vowels.

[14]Furthermore, Holmer's (1962) 'phonemic' interpretation of the high vowels may be incorrect, see Ó Murchú (1969: 346-7). A further problem with Holmer's study of Clare dialects, which is true to a certain extent of all of his monograph studies, is that it describes an intradialectally diverse and geographically large area, see Holmer (1962: 8). See also Ó Murchú (1969: 345-8) for discussion of this point and other shortcomings of Holmer's study of Clare dialects.

In light of the choice of more than one source for Munster and Connacht dialects, it may seem strange that only two sources both representing Donegal have been chosen to represent so large an area as Ulster. We have already noted that East Ulster dialect studies such as Ó Searcaigh (1925) and Holmer (1938, 1940, 1942) have been excluded as primary sources on grounds that they do not contain sufficient phonological data to merit inclusion in the present study. On the other hand, there have been more substantial monographs published on Donegal dialects than on any other Gaelic dialects. DD has been chosen to represent a conservative southern variety of Donegal Irish; it also provides the most thorough and comprehensive structural (though non-phonemic) account to date of a Donegal dialect. Sommerfelt's later study of Torr (DT) is smaller in scope than Quiggin's and from the historical point of view adds little to Quiggin's earlier work. Sommerfelt's (1965) phonemic analysis of the DT, which is invaluable, has, however, been discussed and utilised in chapter 2. Wagner's study of Teileann Irish (GT) in south west Donegal has not been included as it is inadequate in a number of ways. See Ó Cuív (1961) for discussion. Ó Searcaigh (1925) is intradialectally diverse and covers a broad geographical area and subsequently too shallow in its phonological detail of individual dialects to be of use here. The dialect of Tory Island (TY), which represents the phonologically different dialects of north west Donegal,[15] has been chosen according to principles (1) and (3). Although Hamilton refers the reader to earlier accounts for phonetic descriptions of individual phones, the lexicon which is transcribed phonetically provides a fairly full picture of the historical phonology of this dialect.

ScG

Clearly the main dialect areas of ScG are well represented in our selection (see maps 1 and 2):

Central:	GL, DOH, S, R
Peripheral:	GA, GK, ESG, EPG

We have already referred to and discussed some inevitable gaps in our range of Scottish sources e.g. northern Argyllshire and the central Highlands. Some of the guiding principles have had to be relaxed in the case of ScG because of the nature of the available sources. This applies particularly to principle (6) since practically all

[15]In particular we may refer to the frequent occurrence of /e/ in non-palatal environments.

descriptions of ScG dialects, in style and layout, reflect different linguistic traditions. Although the choice of Borgstrøm's (1940) description of Bernera, Lewis might have been chosen according to principle (6), it would be ludicrous to omit Oftedal's description of Leurbost which is one of the fullest and most detailed phonological analyses which exists of a ScG dialect. We have already noted that Ternes (1973), though it provides an indispensable account of ScG phonology, does not provide sufficient examples to warrant inclusion as a primary source here. Some of Borgstrøm's accounts (especially SR) could have been omitted according to principle (3) on the grounds that they do not contain substantial amounts of phonological data. However, they have been retained since they are the most reliable decriptions for the areas they represent; they also have the advantage that they were written by the same author. It should be noted that DOH represents the southern Outer Hebridean dialects of Harris, North Uist, Benbecula, South Uist and Barra which according to Borgstrøm 'have so many systematic features in common' (DOH: 127). The bulk of the phonological material of DOH is 'founded mainly on material from Barra' (ibid) and is ultimately based on Borgstrøm (1937). DOH has been chosen in preference to Borgstrøm (1937) because the former is essentially an expansion of the latter (DOH: 127).[16]

GA and GK, although problematical in a number of ways, have both been chosen in order to give as complete a picture as possible of south western Argyllshire dialects.[17] Both rather than one have been chosen also because they differ in minor phonological points.[18] We have already noted that Holmer's (1938) description of Argyllshire dialects has been omitted on the grounds that it does not contain substantial amounts of phonological material. Furthermore, the title of Holmer's (1938), *Studies on Argyllshire Dialects*, is rather misleading as it does not refer to one homogeneous dialect area. The phonological data refer to the dialects of the Isle of Gigha, the Isle of Islay and also to the Isle of Skye, the latter hardly admissible as an Argyllshire dialect. The wide remit of Holmer's study has inevitably led to sketchy descriptions of individual dialects. ESG and EPG provide invaluable studies of eastern peripheral dialects. These studies are substantially different to previous accounts of Gaelic dialects in a number of ways. They, following Ternes' (1973) pioneering study, represent a new trend in Gaelic phonological studies which contain no account of the

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[16]Furthermore, Borgstrøm (DOH: 127) himself notes 'a bad error' in the transcription of the 1937 book on Barra.

[17]They, like Holmer's (1962, 1965) study of Clare dialects, also refer to dialectally diverse areas.

[18]Cf. the choice of IT, IE for Connacht dialects.

historical development of phonemes. The present study therefore provides for the first time an account of aspects of the historical phonology of these dialects. Their methods of phonological transcription differ somewhat from previous studies of Gaelic dialects and will require some comment, on which see chapter 2 especially.

Manx

No study of Manx has been included as a primary source for a number of reasons. All accounts of Manx exhibit a phenomenal degree of phonetic diversity which is difficult at the present state of research to analyse structurally.[19] The inclusion of such 'raw' data in a minute phonological study like the present would be futile. The Manx data is, however, considered in a general way in some chapters below when it adds to or sheds light on Irish and ScG material. We have already noted that a consideration of the language of the larger geographical areas of Ireland and Scotland is in any case sufficient for present purposes, despite O'Rahilly's (IDPP: x-xi) pronouncement on the futility of investigating the history of any one variety of Gaelic 'without taking full account of the other two'.

6 Comparability of sources

The question of the comparability of sources requires some comment. From the structural point of view, there is no serious problem when we compare Irish dialects with other Irish dialects or Scottish dialects with other Scottish dialects, since as we shall see, the phonological structure of the vowel systems of Irish and ScG are remarkably stable and to a large extent internally congruent, although some Donegal dialects do differ substantially from other Irish dialects. Tracing units of a protosystem in such a scenario within one language group, Irish or ScG, therefore poses few problems. It is only when we come to compare Irish with ScG developments that problems may potentially arise. For instance, how can we legitimately compare a phoneme in Irish, say, /o/ with a phoneme /o/ in ScG? More importantly, how can we compare a CG phoneme, e.g. //o// with an Irish or ScG phoneme /o/?[20] For comparative historical purposes, however, we may interpret each vowel phoneme as a set of phonetic features which can, for comparative historical purposes, be considered

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[19]See, for example, Broderick (1984) sub *colbagh, loayrt* where realisations fluctuate widely in terms of quality and length. Some sound phonological work has been done, however, on Manx, see Thomson (1976), Ó Sé (1989), Broderick (1984).

[20] See Bynon (1977: 104-7), Chambers (1980: 38-45) for general discussion.

outwith the phonological system to which they properly belong. In this respect we adopt a more Jonesian than a strictly structuralist approach to the phoneme which is more concerned with the structural relationships between phonemes.[21] Therefore, when we refer to CG //o//, we refer to a set of phones which can be classified as mid back rounded vowels. /o/ in Irish refers to mid back round or unround vowels. When we refer to ScG /o/ on the other hand, we refer to high-mid rounded vowels, as opposed to /ɔ/ which refers to low-mid rounded back vowels. This approach has the advantage of retaining structural information relevant to each separate phonological system while at the same time displaying the phonetic characteristics of individual phonemes. Most of all, this allows us to compare the diachronic development of Gaelic dialects.[22]

Comparibility is of course hampered by non-attestation of given lexemes because a particular lexeme may not be widely attested in our sources or is geographically restricted. In some cases the lexeme in question may have been obsolete at the time of recording. For instance, the word *teaghlach*, which we might expect to be a commonly occurring lexical item throughout Gaelic dialects is attested in Irish monographs only in DD and TY, not in IWM, IR, ICF, IT, IE.[23]

When we consider the time span within which our selected sources were published the question of comparability naturally arises once again. Our sources range from the beginning to the end of the present century, the earliest being DD (1906), the latest being EPG (1989). Given the broad time scale intervening between the publication of DD and EPG, it is quite remarkable that the majority of informants (with the exception of those of DD and ESG, TY) belong to roughly similar age cohorts, defined according to year of birth. The following table illustrates the range of informants' dates of birth:

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[21]Jones (1936: 48) defines the phoneme as 'a family of sounds consisting of an important sound of the language (i.e. the most frequently used member of that family) together with other related sounds which take its place in particular sound-sequences'. This is the definition of the phoneme which is adopted in the Dublin Institute for Advanced Studies' series of monographs. See for example IWM: 7-8.

[22]For the use of the term *word class* and its significance to our framework, see below.

[23]In ScG this lexical item is attested in SR, GA, GK, ESG, EPG but not in GL, DOH. A consideration of LASID II, III, IV, Q. 1009 shows that *teaghlach* 'family' is geographically restricted to Donegal dialects, see also map 11.

(Average) years of birth of informants in Irish monographs	
Irish:[24]	
IWM	c. 1873
ICF	1865-1907
IT	c. 1875
IE	c. 1870
DD	1831
TY	1899-1924

Table A

(Average) years of birth of informants in ScG monographs	
ScG:	
GL	1888
DOH	1859-1879
SR[25]	c. 1859
GA	c. 1843-1878
GK	c. 1849-1854
ESG	1894-1934
EPG	c. 1860-1894

Table B

It is clear from the above tables that the language described in the present study refers for the most part to the Gaelic of people born in the latter half of the 19th century. There is clearly a wide range of generations represented in the individual monographs and consequently in the present study. In a historical study of the sort we are undertaking, such generational differences are, however, of minor significance. Our goal after all, is not to describe the reflexes of the CG protosystem at a given precise time but rather to describe the overall reflexes of that protosystem which are observable in 20th century accounts of Gaelic dialects, and in so doing to discover and account for the main tendencies of phonological development in the Gaelic language(s). While our starting point CG is non-time-specific, our terminus is time-specific only in the sense that it pertains rather broadly to the 20th century. Since we are not primarily interested in establising the temporal aspects of individual developments, the relatively wide time-span which our sources cover is thus rendered irrelevant for the purposes of the present study.

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[24]Breatnach (1947: ix) provides no background information on his informants.
[25]Borgstrøm (1941) provides no background information on his informants.

7 Layout and structure of thesis

This thesis is divided into eight chapters. The first chapter describes the CG short vowel system and also provides a brief sketch of the synchronic and diachronic consonantal systems of Irish and ScG. The second chapter discusses the synchronic vowel systems of Irish and ScG which are fundamentally different. Irish dialects on the whole may be described in terms of a 5V short vowel system whereas ScG dialects may be described in terms of a 9V system, although some Donegal dialects may have elaborate systems more akin to the ScG type. Within both Irish and ScG, reduced systems may occur. For instance, some peripheral ScG dialects may be described in terms of a reduced 8V system. Similarly, southern Irish dialects may arguably be described in terms of a reduced linear 3V system which discards the traditional front–back contrasts. The theoretical issues involved in the structural interpretation of southern Irish vowels are discussed in chapter 2, but the linear interpretation is ultimately rejected in favour of the traditional 5V system. We believe that the 'correct' representation of southern Irish dialects will not be fully resolved until adequate cognisance is taken of native speaker intuition as well as morpho-phonemic data.

The core of the thesis, contained in chapters 3 to 7, describes in some detail the historical phonology of //a//, //e//, //o//, //u//, //i// respectively in Irish and ScG. Each of these chapters is divided into three sections. The first two sections discuss the developments of these vowels in Irish and ScG respectively, and also provide an analysis of these developments. The final third section compares developments in Irish and ScG. These sections are based on the lists of words, arranged according to phonological environment, contained in appendices 1-5 (volume 2), which illustrate the significant phonological developments in each dialect. These lists are not intended to be exhaustive, merely representative of significant developments.

In order to discuss the historical development of individual vowels satisfactorily and adequately, it has been necessary to divide the discussion of individual vowels into four subsections since the development has been substantially different in the four phonological environments which may be described as follows:[26]

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[26]This is implicit in the Dublin Institute for Advanced Studies' monograph series on Irish dialects.

(i) **__ C, C ≠ F[+voice], SON#\+C[+hom]**

(ii) **__ F[+voice] [+labial]**

(iii) **__ F[+voice] [+dental]\[+velar]**

(iv) **__ SON#\+C[+hom]**

In Irish dialects when original intervocalic fricatives are lost, disyllables are reduced to monosyllables unless otherwise stated. In such cases in ScG dialects disyllables are retained unless otherwise stated. Where fricatives have been retained, this is indicated. The environment __ SON#\+C[+hom] is intended to signify the phonological environments in which lengthening and diphthongisation of CG short vowels occurs in Gaelic dialects, i.e. before the tense sonorants where these occur word finally or when followed by a homorganic consonant, usually a stop. It is also intended to signify instances of environments containing originally non-tense sonorants followed by homorganic consonants, usually stops. Lengthening and diphthongisation do not occur before sonorants in other environments, for instance when sonorants occur intervocalically. This is illustrated by the following words:

V → V:, VV	V → V
gearr /a:/	*gearradh* /a/
rann /au/, /a:/	*ranna* /a/
caillte /ai/, /a:/	*caillidh* /a/
am /au/, /a:/	*ama* /a/
ann /a:/, /au/	*Anna* /a/

In chapter 3-7, a rudimentary form of statistical analysis is brought to bear on the phonological material in order to obtain objective results on the frequency of individual developments and, moreover, on the particular phonological environments in which these developments took place, the importance of which for Gaelic diachronic development cannot be overstated (see chapter 8). Such objective results founded upon basic mathematical calculations, replacing the initial impressionistic observations contained in O'Rahilly's masterly *Irish Dialects Past and Present*, enable us to state and describe with more precision and accuracy than ever before, and in some cases for the first time, a large number of diachronic phonological rules for Gaelic. However, we are only too well aware of the short comings of the basic statistical calculations from a mathematical viewpoint. For instance, in some cases, the returns for a particular development are so low that a statistical analysis is practically meaningless. Nevertheless, the methodology espoused by such analyses in these

chapters at least provides a potentially useful tool with which diverse sets of phonological material may be compared, and is of value in that sense.

The final chapter 8 provides a summary of developments based on the CG short vowel system as a whole. It also provides a discussion of the structural implications of the main vocalic developments. It also establishes for the first time a set of implicational relationships between certain CG short vowel developments, and also between various phonological environmental constraints, which provides a tentative chronological ordering for individual developments. Finally, the main conclusions of the thesis are summarised.

8 Terminology

Major *vs* minor developments

An examination of the available data for the development of individual CG vowel phonemes according the the four phonological environments listed in the above section, shows that for each vowel, we may usefully differentiate between what we may broadly refer to as ***major*** and ***minor*** developments in each of these phonological evironments. By major developments, we mean developments which are attested for a significant number of lexical items. By minor developments, we generally refer to developments which are either exceptional or are clearly restricted to a small set of lexical items. For instance, in chapter 3, we refer to the major development of //a// > /au/ in //av// sequences in IWM e.g. *abha, abhras* etc. and to the more restricted minor development of //a// > /ou/ as witnessed in *labhair, gabhar*. In some instances, the distinction between major and minor is in practice meaningless, since it is difficult, if not impossible, to establish what the most frequent development has been in some cases. For instance //av// sequences yield both /o:/ (e.g. *gabhal, gabhar, tabhairt*) and /au/ (e.g. *abhaill, dabhach, fabhair*) in TY, see chapter 3. By retaining the distinction between major and minor developments, we may distinguish between general tendencies and exceptional, analogical and other non-phonological developments.

Word class

Our use of the term word class follows that of Labov (1994: 164). A typical word class in Gaelic is the CG {//a//} class, that is, 'all the words containing vowels that are reflexes or direct descendants' of CG //a//. In addition, we also refer to subclasses, defined by specific outcomes of CG word classes, e.g. {//að/ɣ// > /əi/} which refers to all the words containing the diphthong /əi/ that are reflexes or direct descendants of //að/ɣ// sequences. The concept of the word class allows us 'to make comparisons

across dialects, and to infer developments by the logical relationship between dialects' from their starting point in CG. We have in general and where possible not included in diachronic word classes vowels contained in grammatically inflected words since these are subject to the processes of analogy and levelling. For instance, we do not include *poill/puill* (G sg, pl of *poll*) as a member of the {//o//} or {//u//} class.

Chapter 1

Section A
Common Gaelic Monophthong Vowel System

We take the CG monophthongal vowel system to be:

//i(:)// //u(:)//
//e(:)// //ə:// //o(:)//
//a(:)//

Leaving aside diphthongs,[1] this 5V system is that which is generally accepted for Old Irish[2] and subsequent stages of Irish.[3] We have added //ə://, the reflex of *ao*, after Shaw (1968/69) and Ó Murchú (1989a). Disregarding //ə:// which belongs to the long V: system, the short vowel system may be described in terms of the distinctive features *high, low, back, front, unround, round*[4] as indicated in the following table:

	The Distinctive Features of the CG monophthongal system					
	High	Low	Back	Front	Unround	Round
//a//	–	+	–	–	+	–
//o//	–	–	+	–	–	+
//u//	+	–	+	–	–	+
//i//	+	–	–	+	+	–
//e//	–	–	–	+	+	–

Table 1A.1

Pedersen (1909: 339-341) posited the existence of an extra short vowel phoneme /ö/, intended to signify a mid rounded vowel, similar in quality to German umlauted *o*. His evidence for the existence of this extra vowel phoneme was based on spelling alternations between *au, ai, i, e, u* in words like *laugi, laigiu, lugu* 'smaller', *aurchor,*

[1]For a discussion of diphthongs in Old Irish, see Greene (1976).
[2]The classification of the earlier stages of Irish set out in McCone (1994: 63) is adopted here i.e. Archaic Irish 400-600; Early Old Irish 600-700; (Classical) Old Irish 700-900.
[3]See Thurneysen (1946: 35), Sommerfelt (1963), Bliss (1979: 198), Ó Cuív (1979: 115), Kelly (1988: 296), McManus (1982: 4; 1991: 120; 1994: 344), McCone (1994: 91; 1996: 137).
[4]The features back, front and unround, round could be reduced to [+/–back] and [+/–round]. However, these four features have not been collapsed here in order to facilitate comparison between the features of the original CG system and the sum of historical developments, see chapter 8.

urchor, erchor, irchor 'shot' etc.[5] For examples, see appendix 7. Thurneysen (GOI: 52) follows Pedersen (1909: 339-41):[6]

> Evidently we are dealing here with a vowel for which the Irish script had no unambiguous symbol. The fact that it is sometimes written *i* and can rhyme with *e*, as contrasted with its later form *u*, suggests that the sound may have undergone modification, possibly from close to open *ö*.

Greene (1976: 41) argues that the alternations discussed by Pedersen and Thurneysen, rather than representing a separate vowel phoneme for which Irish had no adequate symbol, reflect 'phonetic variations in the realisation of the preverb *air-*, which have then spread to other cases of *air-*'.

Old Irish orthography implies the existence of a 5V system (short and long) if we assume a one-to-one correspondence between vowel graphemes and vowel phonemes.[7] However, given that Gaelic orthography is ultimately based on Latin orthography, which only had five vowel graphemes available, it is conceivable that a non-quinary phonemic system may have underlain the quinary orthographic system. The fact that Gaelic orthography did not develop[8] extra symbols for 'extra' vowels does not necessarily imply that such did not exist at the phonological level.[9] We may compare Modern ScG whose 9V phonemic system is represented by a quinary orthographic system.[10] Similarly in RP English, there is no one-to-one correspondence between graphemes and phonemes e.g. the grapheme <u> may represent /ʌ/, /ɷ/ and /uˑ/; similarly <a> may represent /æ/ and /ɑˑ/.[11] If, as we suggest in chapter 8, that the ScG 9V system developed partially as a result of lexical borrowing from Norse, the use of a quinary orthographic system in ScG to represent a more elaborate

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[5]Later in his *Comparative Celtic Grammar* (96-7), Pedersen does not explicitly refer to a separate rounded phoneme, see Lewis and Pedersen (1937).

[6]I am grateful to Katrin Thier for translating this section for me.

[7]It is generally accepted on a similar basis that Classical Latin also had a quinary 5V system ([+/- long]). See Pope (1934: 74).

[8]Unlike Norse for instance, see Gordon (1927/81).

[9]Simms-Williams (1992: 57-62) argues convincingly that the Ogam *forfeda* -X- and -θ- were adopted by some 'ogam theorists . . . as symbols for Primitive and Old Irish /ɛ:/ and /ɔ:/' (62). He goes on to suggest 'the possibility that the usage in question was originally evolved by a keen-eared person who realised that the traditional five-vowel ogam alphabet failed to differentiate the seven long vowels of Primitive and Old Irish /i: e: ɛ: a: ɔ: o: u:/' (59). Primitive Irish here corresponds to our Archaic and Early Old Irish periods.

[10]It is true that the difference between high and low mid long vowels may, in modern ScG, be indicated in orthography by the use of acute and grave accents respectively. However, this relatively recent practice, is in the process of being phased out in modern ScG. See Ahlqvist (1994: 56), Black (1994: 14-5).

[11]See Hawkins (1984: 12).

phonological system may be quite old. Leaving possible external linguistic factors aside such as Norse influence, however, it has to be said that a reconstruction of the CG vowel system based on a comparative study of the modern dialects on the whole tends to support an original quinary system. Indeed it is remarkable how neatly the modern vowel systems are derivable from a CG quinary 5V system without recourse to external factors. For a discussion of the internal linguistic factors for phonemic split in ScG, see chapter 8. For these reasons we proceed with an assumed underlying quinary protosystem for CG.

It is likely that a 7V long vowel system had developed by the Early Old Irish period with the development of two new compensatory lengthened (probably low) mid vowels following the vocalisation of fricatives before sonorants (Thurneysen 1946: 37-38, 78-80; McManus 1982: 3, 14; 1991: 88-9; McCone 1994: 84-5; 1996: 124) and the loss of preconsonantal nasals (Thurneysen 1946: 126-7; Sommerfelt 1963: 11-2; Simms-Williams 1992: 59):

/i:/	/u:/
/e:/	/o:/
/ɛ:/	/ɔ:/
/a:/	

Early Old Irish 7V: system

It is generally assumed that these two new vowels were low mid vowels (/ɛ:/ and /ɔ:/) which contrasted with the original long (high) mid vowels /e:/ and /o:/ respectively for the reason that only the original mid high vowels /e:/ and /o:/ were diphthongised before nonpalatal consonants to /ia/ and /ua/ respectively some time towards the end of the Early Old Irish period.[12]

Assuming that all lexical items containing these high mid vowels were affected, this diphthongisation would have re-introduced a new quinary vowel system. It is difficult to say how the diphthongisation of /e:/ and /o:/ may have affected the realisation of the low mid vowels /ɛ:/ and /ɔ:/. There are two conceivable scenarios: (a) the diphthongisation had a chain effect which raised the low mid vowels to the mid or high-mid position or (b) the allophonic ranges of the low mid vowels spread to fill the phonological space vacated by /e:/ and /o:/ while still occupying the lower mid position; in the latter case allophones may have clustered around either the high-mid

[12]McManus (1982: 4) implies that there is some amount of diphthongisation of the compenatorily lengthened front mid vowel /ɛ:/. See also Sommerfelt (1963: 10). Evidence for the diphthongisation of /e:/ is more plentiful than that for /o:/.

or low-mid position, depending presumably on the phonological range of the /a:/ phoneme. A comparative study of the realisation of /a:/, /e:/, (/ɛ:/), /o:/, (/ɔ:/) in the modern Gaelic dialects and the phonological space occupied by each in relation to one another would seem to suggest that when /a:/ is [+front] or [–back], then /ɔ:/ rather than /o:/ tends to occur; when /a:/ is [+back], then [o:] rather than [ɔ:] tends to occur. When /a:/ is [+front] or [-back], then [e:] rather than [ɛ:] tends to occur. This is illustrated by GL, DD and IR (in the following the most frequently occurring phones are indicated by bold typeface):

GL

/e:/	/o:/ (less common than /ɔ:/)
/ɛ:/ (occurs in few words)	**/ɔ:/**
[a:] (in most positions)	[ɑ:] / __ L N R

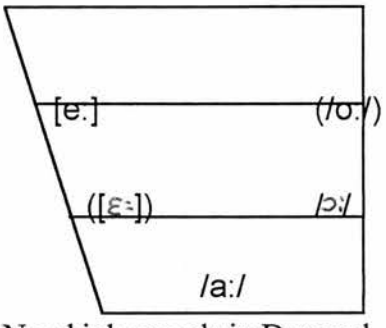
DD

[e:]	/o:/
[ɛ:]	**/ɔ:/**
[a:]	

IR

[e:] / C' __, / __ C'	**/o:/**
[ɛ:] / C __	
[a:] (few)	**[ɑ:]**

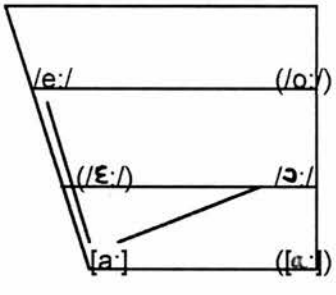
It is not immediately clear from Quiggin's description of /a(:)/ that it is a central vowel. Indeed, Quiggin is quite categorical in his description of the phonetic value of /a/ and /a:/ which he groups with the back vowels. He compares [ɑ] with French *ma* and [ɑ:] with French *rage* (DD: 5, 9). My own auditory impression of these French vowels, however, lies in the low central to front area. Quiggin goes on to note that 'it [ɑ:] remains independent of the quality of the following consonant' (ibid). Quiggin's comments imply that the phoneme /a:/ displays no significant allophonic variation in DD which is remarkable. Other accounts of Donegal dialects report front varieties of the /a:/ phoneme e.g. Ó Searcaigh (1925: 23, 25), Wagner (1959: 66-7), Ó Dochartaigh (1972: 61), Hamilton (TY: 120), Sommerfelt (DT: 12-3, 28-9). Ó Dochartaigh (1987: 63-75), based on LASID illustrates that the average phonetic value of the phoneme /a:/ in Donegal dialects is low central, though some northern dialects have front [a:]. If we assign the /a:/ phoneme to the low central position, symmetry is restored in terms of the phonological vowel space:



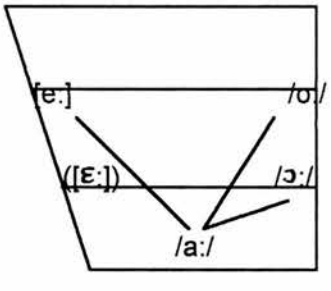
Non high vowels in Donegal

The assignment of the /a:/ phoneme in Donegal to the low central position clearly puts Donegal dialects in an intermediate position between GL and IR, though admittedly closer to GL, in terms of the phonological space which the low and mid vowels occupy. In terms of phonological space, we have the following subsystems:

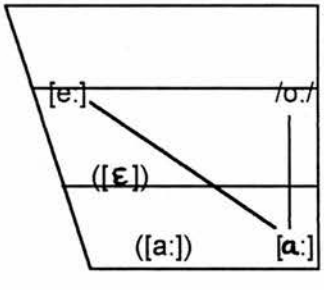
(A)	**(B)**	**(C)**
GL	**Donegal**	**IR**
[a:] >> [ɑ:]	[a:]	[ɑ:] >> [a:]
[e:] >> [ɛ:]	[e:] >> [ɛ:]	[e:] >> [ɛ:]
[ɔ:] >> [o:]	[ɔ:] >>? [o:]	[o:]



Type (A)



Type (B)

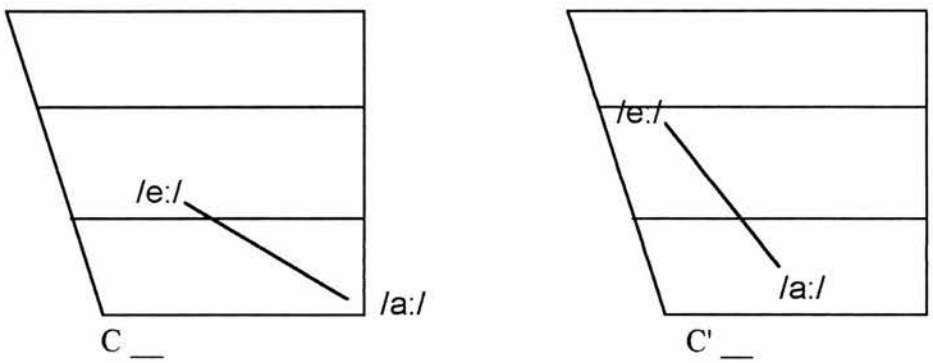


Type (C)

From the evidence presented above from GL, DD and IR, it would appear that the realisation of non-high vowels are interdependent. Labov (1994: 257) notes that

> the front/back balance of neighbouring phonemes is a decisive factor in determining whether an /a/ phoneme will shift phonetically to the front or the back. Moulton . . . demonstrates decisively that the phonetic position of /a/ in Swiss German dialects is linked to the existence of an /æ/ or /ɔ/ phoneme. Any skewing of the system of neighbouring phonemes is reflected in the allophones of /a/: systems with /æ/ but no /ɔ/ show back varieties of /a/, those with /ɔ/ but no /æ/ show front varieties, and so on.

Although we take the view that it is the low vowel /a/ which has primacy over the relative positioning of the mid vowels in Gaelic, Labov's conclusions nevertheless offer corroborative evidence for the interdependence of non-high vowels. The distribution described for Gaelic low and low-mid vowels appeals to the concept of 'phonological space', i.e. to the relative 'distance' between neighbouring phonemes. See Hawkins (1984: 34-5, 234-6).[13] This is further supported by considering the realisation of /e:/ and /a:/ in IR in relation to one another in palatal and nonpalatal environments.



McCone (1994: 85) argues that when Latin *caseus* 'cheese', pronounced /kɔ:seus/ in British Latin, was borrowed into Gaelic as *cáise*, Gaelic must have had a system similar to that presented under type (C) above, i.e. it did not have a low-mid back vowel /ɔ:/. He argues further that when Latin *pac-* 'kiss', pronounced /pɔ:g-/ in British Latin, was borrowed as *póg*, Gaelic must have had a system similar to one of those represented by type (A) or (B), i.e. it must have contained the vowel /ɔ:/. McCone argues further that *cáise* was borrowed during the fifth century when Irish did not have the vowel /ɔ:/ and that *póg* was borrowed later, some time in the sixth century when /ɔ:/ had developed in Irish. While McCone's chronological explanation for the different treatments of British Latin /ɔ:/ in Irish is possible, it is not the only explanation.[14] If we accept that there may have been early dialectal differences in the realisation of the low and mid vowels in Gaelic, the different treatments of British Latin /ɔ:/ can be explained as dialectal phenomena. In other words, systems similar to (A), (B) and (C) may have been contemporaneous as they are today, rather than being chronologically separate as suggested by McCone. In such a scenario, British Latin

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[13]We may also compare western Ross-shire dialects which according to Borgstrøm have, in comparison with other ScG dialects, higher varities of /a/, /ɔ/ and /ɛ/ (SR: 67).

[14]The orthodox view that Latin words were borrowed in two separate stages in Irish (MacNeill (1931), Sarauw (1900: 3-20), Jackson (1953: 134)) has recently been questioned and fundamentally revised by McManus (1982, 1983).

/ɔ:/ would be borrowed as /ɔ:/ in a dialect of type (A) or (B) and as /ɑ:/ in a dialect of type (C). It is thus possible that *cáise* and *póg* may originally have been borrowed under different dialectal conditions, whether geographical or social, it is impossible to say.[15] It is tempting to suggest that types (A) and (B) may have characterised northern varieties of Gaelic and type (C) southern varieties. If this were correct, it would illustrate the conservative nature of Gaelic allophony, in this instance, the retention of particular varieties of allophonic realisations of low and mid vowels over a considerably long period of time. What we have said with regard to the long vowels is equally applicable to the short vowels as regards the correlation between low and mid vowels.

We cannot, of course, be certain with regard to the allophonic range of each CG phoneme or how exactly these vowels should be plotted in the vowel quadrilateral. We argue in subsequent chapters, especially in chapter 8, that the shape of the CG monophthong vowel system depends to a large extent on the positioning of /a(:)/. The development of palatalisation in Archaic and Early Old Irish would seem to imply that /a/ and /a:/ were non-front, vowels since palatalisation does not develop preceding either vowel. The non-palatalising effect of /a(:)/ has been taken as evidence for the back quality of /a(:)/ in earlier stages of the language. Although /a(:)/ patterns with the back vowels in this respect, we can only infer that /a(:)/ was non-front, not necessarily back. McCone (1994: 82 et passim) consistently refers to Archaic Irish /a/ as a 'guta cúil'. It can be inferred from McManus' (1982: 1) tabulation of the Old Irish vowel system as

i	u
e	o
	a

that he considers /a/ to have been a back vowel, but nowhere is this stated explicitly. This is also suggested by Ó Dochartaigh (1987: 71) who notes:

> We can not of course be certain of the precise historical quality of the neutral allophone [of /a/], but a consideration of its realisations in other Irish dialects and in Scottish Gaelic suggests that it was a low back variety.

Ó Searcaigh (1925: 25), followed by Sommerfelt (DT: 12), also takes this view point and suggests that the fronting of /a:/ in Donegal dialects originated in the prepalatal

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[15]We may compare Jackson's (1953: 135) similar, but different comment, that linguistic changes in loanwords 'may have taken place at different rates in different parts of the country'.

environment and spread from there to other environments. Both Ó Searcaigh and Sommerfelt note that the change from low back to front vowels was observable across the generations when they were conducting their fieldwork. See Ó Dochartaigh (1987: 72). The hypothesis that the fronting originated in the prepalatal position would seem to be supported by Ó Dochartaigh's analysis of the LASID material where the fronting and raising of /a:/ occurs more frequently in the prepalatal position. Ó Dochartaigh also shows that the fronting of low vowels appears to have affected long /a:/ more so than short /a/. If the fronting is to be explained as an allophonic adaptation to a following palatalised consonant, we might expect the short vowels to exhibit a far greater tendency to be raised and fronted than long ones. See Ó Dochartaigh (1987: 73). It is a well known fact that long vowels in Gaelic, because of their inherent length, are less liable to adapt to segmental environment than short vowels. These general phonological considerations may imply that the fronting of long /a:/ may not have had a phonetic trigger. Ó Dochartaigh (1987: 74) puts forward another argument against Ó Searcaigh's hypothesis. Noting that //a:// has frequently been raised to /ɛ:/ before non palatal consonants in the ScG dialects of Arran, he concludes that the fronting may effectively have been an unconditioned one:

> This would suggest that there is no intrinsic phonological connection to be made between the vowel before neutral and before palatal consonants and that any suggestion of a simple extension of allophonic variation from one environment to the other as made by Ó Searcaigh can not be easily sustained. (Ó Dochartaigh 1987: 74)

We may now return to the question of the original quality of /a/. We have noted Ó Dochartaigh's (1987: 71) suggestion that a consideration of the realisation of /a(:)/ in Irish as well as ScG 'suggests that it was a low back variety'. Our own conclusions reached in chapter 8 below argue that it is difficult to speak with certainty with regard to the phonetic quality of /a/, without reference to the following consonantal environment. In particular, we argue that /a/ is likely to have been [+back] only before velarised consonants and perhaps when preceded by certain labials and velars. Otherwise, a quality which is neither front nor back most adequately explains the synchronic and diachronic facts. We have noted above that the non-palatalising effect of /a(:)/ is not an argument *per se* for the back quality of /a(:)/ in earlier stages of Gaelic. Moreover, dialectal variation in the realisation of /a(:)/ and consequently in other non high vowels may already have existed in the Old Irish period itself. For the reasons just outlined, the most satisfactory tabular representation of the /a(:)/ phoneme is to place it in the low central position.

Section B
Common Gaelic Consonant System

The CG consonant system may be set out as follows:

p	p'	t	t'	k	k'	
b	b'	d	d'	g	g'	
f	f'	θ	θ'	x	x'	h
v	v'	ð	ð'	ɣ	ɣ'	
		s	ʃ			
m	m'	N	N'	ŋ	ŋ'	
ṽ	ṽ'	n	n'			
		L	L'			
		l	l'			
		R	R'			
		r	r'			

CG consonant system

This is the system which is generally assumed for Old and Classical Early Modern Irish. See Kelly (1988: 299-300), McCone (1994: 90; 1996: 26), Ó Cuív (1979: 115), McManus (1994: 351). At the heart of the CG system is the opposition between non-palatalised and palatalised consonants. On the development of phonemic palatalised consonants, see Greene (1973), McManus (1991: 90-1), McCone (1994: 81-6; 1996: 115-20), Russell (1995: 35-8). Both Greene and McCone argue for the development of palatalisation in several stages, beginning in word final position and gradually affecting word medial consonants (and clusters) and finally word initial consonants (and clusters). Thurneysen's (GOI: 96-98) suggestion of the existence also of *u*-coloured consonants in Old Irish has been refuted by Greene (1962), followed by McCone (1996: 27).

Nasalised labial fricatives

McCone (1994: 90; 1996: 26) and others posit the existence of phonemic nasalised labial fricatives /ṽ ṽ'/. Kelly (1988: 299) is the only author who prefers to mark the nasalisation on the vowel preceding original //ṽ// rather than on the consonant. He contrasts *dumae* /dũve/ 'mound' with *dubae* /duve/ 'gloom'.

Unlenited and lenited sonorants

The opposition between /L N R L' N' R'/ and /l n r l' n' r'/ is generally held to have been based on a feature of length or tenseness. See Thurneysen (1946: 85), Kelly (1988: 300), Russell (1995: 38). McCone (1994: 74) notes that it is impossible to be

certain about the phonetic features of these oppositions. For the original system of vibrants, see also Ó Murchú (1986: 21).

C~C'

It is debatable whether or not palatalisation affected all consonants in all varieties of Gaelic at any given period. In particular, it is conceivable, though perhaps improbable, that phonemic palatalised labial segments may not have been a feature of earlier ScG for instance (see below).[16] Similarly, although a phoneme //R'// is assumed for earlier stages of the language, it appears to have merged early with //R//. In any case, we are uncertain as to how it may have been pronounced. With these significant additions and some minor reservations, the traditional consonantal system set out above will be taken as the underlying CG protosystem.

Stops

It is generally assumed that the distinction between the stops /b d g b' d' g'/ and /p t k p' t' k'/ respectively was one of [+/–voice] (Lewis (1937: 27 et passim), Thurneysen (1946: 135),[17] Quin (1975: 3), Kelly (1988: 299), McManus (1991: 123)). It is quite possible that in some dialects, particularly perhaps those in northern areas, the distinctive feature of these stops may have been [+/-aspiration] as in Modern ScG. It is worth noting that the representation of word medial and word final stops in Old Irish manuscript orthography appears to reflect a stop system more akin to modern ScG than to Irish. In other words the representation of modern *b d g* by *p t c*, rather than

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[16]Sommerfelt (1937: 278) suggests for ScG and for Ulster and north Connacht Irish dialects that phonetically palatalised labials may never have existed in these dialects. He argues that the lack of phonetic palatalisation of the labials reflects the 'archaic' situation: 'C'est l'état de choses d'Ulster et de Connacht qui est ancien.' This was refuted by Jackson (1967: 180, 190). Sommerfelt (1957: 369) adheres to the view that the situation in Ulster reflects 'an archaic trait' which corresponds with other conservative features in these dialects. It is important to note that at no stage does Sommerfelt argue that there was no phonemic opposition between the traditional broad and slender labials; his argument refers only to the phonetic realisation of the 'slender' labials. Sommerfelt (1957: 368) concedes that 'there exist many traces of an earlier system with palatalised labials in Scottish Gaelic' and cites 'the numerous forms with initial *bj, pj, mj* going back to *be-, pe-, me-*' e.g. [bjaLəx] *bealach*, [spjaL] *speal*, [mjaL] *meall*. Jackson (1967: 190) also quotes instances with initial palatalised labials from Primitive Irish e.g. /b'eo:/ *beo*, /f'iu:/ *fiú*, /b'e^{a}xt/ *beachd*. Both are mistaken here as there can be no question of the existence of initial phonemic palatalised labials before the changes //eo:// > //(j)o:/, //iu:// > /(j)u:/, //e// > /(j)a/. Jackson (1967: 192) does, however, give the more convincing example of *luibh* from Primitive Irish **lubis*, the synchronic vocalism ([ui]) of which is, according to Jackson, 'quite inexplicable' unless we assume an original /Luv'/ with final palatalised labial //v'//. Borgstrøm (DOH: 215) agrees that 'in Early Gaelic the labials, like other consonants, presented a systematic opposition between non-palatal and palatal forms'. For an alternative interpretation of the facts, see below.

[17]Thurneysen (1946: 135, § 220) implies that he interpreted /d g/ as voiced. Lewis (1937) and Thurneysen (1946) frequently use the term media to refer to /b d g/ and tenuis to refer to /p t k/.

reflecting the British realisation of classical Latin *p t c* (i.e. voiced stops),[18] which is the orthodox view, may conceivably have represented a series of voiceless unaspirated stops similar to those found in modern ScG. It is interesting to note that non-initial /b d g/ appear in Ogam as *b d g* and also in some of the earliest Old Irish sources (Thurneysen 1946: 23; McManus 1991: 123). McManus (1991: 127) explains the differences between Ogam and Old Irish manuscript orthography as follows:

> One may say that the orthographical convention of the Ogam inscriptions represents the earliest attempt to write Irish words and names . . . . The earliest forms of MS Irish show a continuation of some of the characteristic features of Ogam orthography, a fact which makes a hard and fast cleavage whether social, religious or otherwise unreal, but a major overhaul of the orthography was taking place in the seventh century introducing the influence of British Latin based orthography and updating spelling conventions to reflect the spoken word more accurately.

I would like to suggest that some of the qualitative differences between Ogam and manuscript Old Irish, rather than representing a chronological difference may in fact represent dialectal differences during the Archaic and Early Old Irish periods, with Ogam representing southern varieties, and the manuscript sources representing northern varieties. In support of this, we may note that the distribution of Ogam inscriptions in Ireland is largely, though not totally, confined to southern Ireland.[19] However, as McManus correctly points out, though perhaps over cautiously, 'the significance of this distribution for pinpointing the *locus* of the creation of the Ogam script is indeterminate' (McManus 1991: 45). He continues:

> What can be said is that the cult of erecting monuments with inscriptions in the Ogam character probably originated and was certainly most predominant in southern and particularly south-western Ireland, and this area remained the focal point for it to the end (ibid).

That Ogam was created in southern Ireland must nevertheless remain a distinct possibility.

There is an increasing body of persuasive evidence which argues for a northern provenance for the Old Irish literary language. This has been suggested independently by various scholars such as Kelly (1982: 89), McCone (1985: 97), MacEoin,[20] Ahlqvist (1988: 28-30). If the seemingly northern orientation of our Old Irish literary

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[18]See Thurneysen (1946: 566-8), McManus (1991: 123), McCone (1996: 30-1).
[19]See distribution map in McManus (1991: 46).
[20]This view was aired by Gearóid Mac Eoin in an as yet unpublished paper 'The standardisation of Old Irish', read at a colloquium held at University College, Dublin 1981. See Ahlqvist (1988: 35, n. 8).

sources be accepted in terms of lexical items, phonology and syntax, then it is not unreasonable to assume that Old Irish manuscript orthography may also have originated in the same area. This may lend some support in particular to the hypothesis that the representation of unaspirated stops by the graphemes *c p t* in Old Irish manuscript sources may reflect northern varieties of Irish/Gaelic. In particular, it suggests that the choice of the symbols *c p t* rather than *g b d* may have been due to phonological characteristics of certain varieties of Gaelic rather than British Latin. McCone (1985: 97), based on the evidence of relative clauses governed by prepositions in Old Irish sources, concludes:

> I suspect that this may be one of the few cases where variant usages in the Glosses probably have a base in different regional dialects, the preposition plus *-(s)a* type of apparently northern origins being rapidly absorbed into the literate register whereas the "conjugated" preposition type of broadly southern origins was apparently confined to colloquial usage for centuries and only cropped up occasionally in the literature. The fact remains that this could happen as early as the eighth century.
>
> Should this scenario be roughly correct, a northern locale for development of a written Old Irish standard would be indicated. Although Gaelicized Scotland hardly seems a viable candidate, the nearer such a point of origin should be to Scotland the better. Accordingly east Ulster, perhaps one of its great monasteries such as Bangor, would have considerable attractions.

McCone himself notes that the relative construction in question is still the norm in modern ScG. Given this fact, it is extraordinary, though fairly typical of Irish scholarship when it comes to historical linguistics, that Scotland is demoted to the margins in this manner. There is no sound reason to assume at the present state of knowledge that the Old Irish literary standard, and in particular Old Irish manuscript orthography, was not created on Scottish soil. It must, at the very least, remain a possibility. Further research may well prove a Scottish origin or at least a Scottish dimension to some of the Old Irish glosses. The monastery at Iona, for instance, would have just as 'considerable attractions' as Bangor as a locus for the creation of the Old Irish literary standard language including its orthography.[21]

The contrasts /b p v ~ b' p' v'/, /t d ~ t' d'/

It is generally assumed that all consonants were affected by palatalisation and therefore that all consonants had palatal congeners. For a discussion of the palatalisation of the labials in earlier stages of the language, see the discussion below. To judge by the symbols normally used to denote the palatal congeners of the stops, it

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[21]Cf. McCone (1985: 97).

would appear that it is generally assumed that these stops were realised as palatalised stops with internal as opposed to external or extra segmental palatalisation, of the type generally found in Irish dialects.[22] However, we have no way of knowing for certain what the phonetic realisation of palatalised stops may have been during earlier stages of the language. It is quite possible, and indeed very probable, that a certain amount of variation existed at all times throughout the Gaelic-speaking area in the realisation of palatalised stops. Alternation between internal and external palatalised stops may have been a feature of all stages of the language, the alternation in specific instances no doubt being affected by the realisation of nonpalatal congeners.[23] The external realisation of palatalisation may in some cases have led to phonemic reinterpretations and restructuring, see discussion below of labials in ScG.

The CG consonantal system can be satisfactorily defined in terms of the distinctive features *velarised* and *palatalised*. Of the 4 possible combinations of [+/– velarised] and [+/– palatalised], only three combinations are possible in Gaelic since the presence of a plus value in one feature makes the presence of a minus value in the other redundant. The consonantal system of CG may be described as follows:

C[+velarised]
C[+palatalised]
C[–velarised] [–palatalised]

It is difficult to know for certain which CG segments should be classified as C[–velarised] [–palatalised]. However, based on the synchronic evidence, we surmise that the broad segments //s t d h// may be categorised as [–velarised]. It is uncertain whether or not the so-called 'lenited broad' sonorants //l n r// are to be categorised as plus or minus velarised. However, in some Connacht dialects, /l n r/ are synchronically

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[22]This is implicit throughout Ó Dochartaigh's discussion of affrication (of palato-dental stops) in Ulster dialects for example. By internal palatalisation, I refer to palatalisation which is present throughout most if not all phases of the articulation of a segment; in other words it refers to a secondary articulatory feature. By external palatalisation, I refer to palatalisation which is present only towards the beginning or end of the articulation of a segment and which can be transcribed phonetically as a discrete phonetic segment. Compare [t'], [b'] (internal palatalisation) with [tʃ], [bj] (external palatalisation). The terms internal and external palatalisation represent an adaption and extension of Ó Dochartaigh's (1987: 155) uses of the term 'externalisation'.

[23]For instance affricated palato-dentals do not appear in dialects where the 'broad' dentals are velarised. Indeed it could be said that the occurrence of affricated palato-dentals tends to occur only in dialects where the nonpalatal dentals are not marked by any significant degree of velarisation. In Donegal dialects the phonemic opposition between broad and slender labials is based on the feature [+/–labialisation], not palatalisation. See Sommerfelt (1937, 1957).

velarised (IT, IE). In DD /r/ is not apparently velarised; it is uncertain if /n/ is velarised; /l/ may be velarised, see DD: 81, 88.

Section C
The Consonant System of Irish Dialects

The phonemic inventory of Irish dialects may be set out as follows:

p	p'	t	t'	k	k'		
b	b'	d	d'	g	g'		
f	f'			x	x'	h	(h')
v	v'			ɣ	ɣ'		
		s	ʃ				
m	m'	N	N'	ŋ	ŋ'		
(ṽ)	(ṽ)'	n	n'				
		L	L'				
		l	l'				
		R					
		r	r'				

The maximal system of consonants in Irish dialects[24]

This represents the maximal system of contrasts possible for Irish dialects and refers in particular to certain Donegal dialects. It describes the consonant systems of DD and TY but not DT (see Sommerfelt 1965: 244-5).[25] The main departure in Irish dialects from this maximal system rests in the number of sonorant segments in individual dialects. The following systems exist:

[24]Cf. Ó Dochartaigh (1992: 83).
[25]Sommerfelt (1965: 244) posits the existence of only 2 vibrants /r~r'/.

Munster (IWM, IR)		**S. Connacht (ICF)**		**Mid, N. Connacht (IT, IE)**[26]	
n	n'	N	N'	N	N'
			n'	n	n'
l	l'	L	L'	L	L'
			l'	l	l'
r	r'	r	r'	r	r'

A clear pattern emerges. 4-n and -l systems occur in Donegal and in north and mid Connacht dialects; reduced 3-n and 3-l systems occur in south Connacht dialects with a further reduced 2-n and 2-l systems occurring in Munster dialects. 2-r systems exist in all Irish dialects except in some Donegal dialects where 3-r systems may exist. Although 3-r systems are not put forward in the Connacht monographs, LASID provides ample evidence for these, see LASID I: 213 (*giorria*), where [R] occurs frequently in Connacht and Donegal dialects. I have, in disagreement with IWM, IR, ICF, IT, IE, interpreted sequences of [hn, hn', hl, hl', hm, hr, hr'] etc. as sequences of /h/+/n, n', l, l', m, r, r/ etc. rather than as discrete phonemic units.[27]

One might also add to the above system the marginal alveolar and affricate unassimilated consonant phonemes from English: /d̪ t̪/, /dʒ tʃ/, /z, ʒ/. See ICF: 36; IT: 42-3; IE: 29-30; IWM: 41; IR: 44. Breatnach (IR: 42-3) is the only account of an Irish dialect to posit a palatalised glottal fricative /h'/. It is clear from his examples that [h'] occurs in the vicinity of front vowels and palatalised consonants only which would imply that it is merely a positional variant of /h/ in such environments. On the other hand, it could be argued that /h'/ exists in Donegal dialects.[28]

The existence of phonemic nasalised labial fricatives /ṽ, ṽ'/ in Irish dialects is questionable. Their existence depends to a certain extent on the data from individual dialects but also on how we interpret nasalisation phonologically. Nasalisation may be viewed either as (a) a suprasegmental component with single segments or string of

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[26]4-l systems have been reported also in more southern varieties of Connacht Irish, chiefly among older speakers e.g. in the western area of Cois Fhairrge, see ICF: 119. Cf. Wigger (1970: 49 ff.). Brian Ó Curnáin informs me that some Carna speakers utilise an /l/ phoneme in morphophonemic alternation between /l'/ and /l/, e.g. in the verbal ending *-áil* /l'/, but future *-ála* /l/. This would imply that the occurrence of a 4-l system in such idiolects is somewhat restricted. See also Ó Curnáin (1996: s.v. Historical Phonology).

[27]Cf. Vinay (1947: 233), Sommerfelt (1949: 417), Hamp (1953: 524).

[28]Depending on our interpretation of i-gliding diphthongs which occur before [h]. If we analyse the i-glide in such instances as an on-glide, then [h] must be analysed as /h'/ or /x'/.

segments as domain (e.g. *cnoc* /krũk/ or /kr̃ũk/), or (b) a segmental realisation of particular phonemes (e.g. *cnoc* /krũk/, /kr̃uk/). The following phonetic realisations of *láimh* are possible in Irish dialects: (1) [Lã:v'], (2) [La:̃v'], (3) [La:v̰'] (Ó Curnáin 1996: s.v. Nasalisation). All of these may be analysed according to (a), and the initial and latter tokens according to (b), whereby /ṽ'/ is a phonemic segment in (3). A segmental analysis of (2) would interpret [ṽ'] as incidentally nasalised following the phonemically nasalised vowel /ã:/. The interpretation of [Vṽ] sequences as /Vṽ/ sequences implies the existence of nasalised labial fricatives in word internal position in dialects where non-nasal labial fricatives do not normally occur word internally, e.g. ICF, IT, IE. Lass (1984: 132) notes that a marked segment (in our case /ṽ/) 'tends to imply the existence of its unmarked counterpart' (in our case /v/). The existence of nasalised labial fricatives (marked) but not the primary labial fricatives in word medial position, does not in itself argue against interpreting occurrences of [Vṽ] as /Vṽ/.[29] It should be added that nasalised labial fricatives are not universally common. They do not appear to be attested in Nartey's (1979) corpus based on data taken from 317 different languages.[30] In light of our discussion we have preferred (a) to reject the existence of phonemic nasalised labial fricatives in Irish and (b) to posit instead the existence of phonemic nasalised vowels and/or suprasegmental nasalisation.[31]

Distribution

Most consonants are found word initially, word internally and word finally, although some fricatives have a limited distribution. For instance, the voiced fricatives /ɣ ɣ'/ occur word initially as the result the initial mutation of lenition, and do not occur word internally in Irish dialects except in a small number of words in some Donegal dialects, e.g. *fiadhaire* /f'iəɣir'ə/ (DD: 116-7), *feaghacha* /f'oɣaha/ (TY: 154). The voiceless fricative /x'/ occurs usually only in initial position as a morpho-phonemic variant of /k'/. Word internal /x'/ does, however, occur in Connacht and Donegal dialects. See ICF: 120; IT: 32; IE: 35; DD: 118-9; TY: 153. Instances of [ŋ ŋ'] occurring before /g k/, /g' k'/ respectively could be analysed phonemically as allophones of the /N/ phoneme in this environment. However, /ŋ ŋ'/ do occur 'independently' in word internal position, seeIWM: 47; IR: 47-8; IT: 37-8; IE: 40;

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[29]Cf. Lass who notes in his discussion of obstruent systems that 'no language has secondary fricatives unless it has primary' fricatives (Lass 1984: 154). A consideration of the material presented in Nartey (1979) illustrates that this statement should be amended to read: 'no language has a secondary fricative unless it contains its primary fricative counterpart'.

[30]Nartey (1979) may not be totally reliable in this respect. For instance, his description of Irish fricatives does not include /ɣ' v/ (Nartey 1979: 58).

[31]This may not hold for all ScG dialects. Holmer (GA: 36) notes for Arran that words containing original //Vṽ//, the nasalisation 'is more marked in the consonant than in the vowel'. See below.

DD: 106-8; TY: 146-7. In the dialect of ICF, however, [ŋ ŋ'] occur only before the segments /g k/, /g' k'/ respectively. This may argue for the assignment of [ŋ ŋ'] to the phonemes /N N'/. I have nevertheless followed de Bhaldraithe in positing the existence of phonemic nasal velars in this dialect.

Distinctive features

The series of stops /p t k p' t' k'/ are distinguished from /b d g b' d' g'/ by the feature of [+/– voice] in Irish. In Connacht and Donegal dialects, final unstressed /g/ and /g'/ have merged with /k/ and /k'/ respectively in a number of words as the following table illustrates:

	IWM	IR	ICF	IT	IE	DD	DT	TY
Nollaig	g'	g'	k'	k'	k'	k'	k'	k'
Pádraig	--	g'	k'	k'	k'	k'	k'	k'
roilig	--	g'	k'	k'	k'	g'	k' (g')	g'[32]
bloinig	--	--	k'	k'	--	--	--	--
tháinig	g'	g'	k'	k'	k'	k'	k'	k'
carraig	g'	g'	g'	g'	k'	k'	k'	k'
cairrgín	--	--	g'	--	g'	--	--	k'
láirig	--	--	--	--	--	k'	k'	--
Gaeilig	ŋ'	ŋ'	g'ə	g'ə	g'ə	k'	k'	k'
easbog	g	g	k	k	k	k	k	g
comhrag	k	--	--	k	k	--	k	k
aiseag		--	--	--	--	k	k	k
**loiseag*	--	--	k	--	--	--	--	--
blomag[33]	k	--	--	--	--	--	--	--
croidhreag[34]	k	--	--	--	--	--	--	--
duibheagán	g[35]	--	--	k	--	--	--	--
gealagán	--	--	--	k	k	g[36]	g[37]	g
buidheagán	--	--	--	--	k	g	g	--
imleagán	k	--	--	--	--	--	--	--
méaragán	k	--	--	k	--	--	--	k
croidhleagán	k	--	--	--	--	--	--	--
carragán	--	--	--	--	g	--	--	--
eilid	--	--	--	--	--	d'	t', d'	t'[38]

Table 1C.1

[32]But plural /rol'ək'ahə/ TY: 313.
[33]From *bolgam* > *bolmag* with metathesis IWM: 109.
[34]From *croidhearg* > *croidhreag* IWM: 109.
[35]Note the /g/ occurs as the onset of the stressed syllable /dəi'ga:n/ IWM: 27.
[36]Realised with initial /d'/ DD: 134.
[37]Realised with initial /d'/ DT: 117.
[38]*eilid* /t'/ 'a two year old sheep' but also *einid* /d'/ TY: 274.

It is clear that the devoicing is most common in Connacht and in Donegal dialects.[39] O'Rahilly (1932: 146-7) links the devoicing of final unstressed /g g'/ (and rarely /d'/ — only attested in *eilid*)[40] in Irish and Manx dialects with the general devoicing of original //b d g// in ScG. Leaving aside instances containing the suffix, *-agán*, the change in Irish appears not to take place following originally unstressed long vowels. The fact that the change, unlike in ScG, does not occur in svarabhakti words e.g. *dearg, dealg* may imply that the change predates the development of epenthetic vowels in which case it could predate the thirteenth century.[41] However, it is possible that svarabhakti words *dearg*, *dealg* etc. may have developed svarabhakti vowels in Irish but were still phonologically analysed as monosyllables, cf. ScG. The change is generally unattested in Munster dialects except in instances which contain the suffix *-agán* and also in the word *comhrag*. In such cases, it is tempting to put such instances forward as possible spelling pronunciations based on the frequent manuscript spellings *-acán* and *com(h)rac*. O'Rahilly (1932: 147) notes that final unstressed *-g* is always unvoiced in Northern Irish. However, *roilig* in DD, DT and TY would seem to be an exception. O'Rahilly (1932: 147, n. 3) himself notes the exception of *carraig* in southern Connacht dialects (ICF, IT). These apparent exceptions may be due to plural forms where the *-g* was not final e.g. *carraig(r)eacha*, *roiligeacha*. On the other hand some examples of devoicing may be explained as originating in plural forms containing *-th-* e.g. *roilig* /g'/ ~ *roiligtheacha* /k'/ e.g. TY. This is also suggested by Quiggin (DD: 137) and Sommerfelt (DT: 118) but this explanation does not account for the majority of the examples. That this devoicing generally only occurs with the velars is, I believe significant, the importance of which I hope to discuss elsewhere. It is also significant that in 17 of the 23 examples (i.e. 74%) the devoicing the velar stop *g* occurs in the environments C[+son]ə __.

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[39]It also occurs in Manx. See O'Rahilly (1932: 147), Jackson (1955: 55, 90).

[40]But *díolaid* and *díolait* are both allowed in the *Irish Grammatical Tracts*, Decl §12, §13.

[41]O'Rahilly (1932: 201-2) argues that epenthetic vowels must have developed before the reduction of the dental fricative //θ// to /h/ (which he dates to the thirteenth century) on the evidence of *colbtha* /koləpə/. Jackson (1972: 135) notes some evidence for the development of epenthetic vowels from the 12th century Gaelic notes rom the *Book of Deer*. Cf. Breatnach (1994: 234) who lists two possible instances from the year 1138.

The oppositions C ~ C'

The opposition between 'broad' (C) and 'slender' (C') consonants in Modern Irish is not based solely on the feature [+/– palatalised]. There are significant dialectal differences. The opposition between all 'broad' (C) and 'slender' (C') consonants in Munster dialects, for instances, is apparently based on both features [+/– velarised] and [+/– palatalised], all 'broad' consonants being marked [+velarised], all 'slender' consonants marked [+palatalised].[42] The feature [+/– velarised] also operates in Connacht dialects but only to a limited extent as it applies only to a subset of consonants. In Donegal dialects, the opposition between 'broad' and 'slender' labials is, as we shall see, based on the feature of [+/– spread] although raising of the tongue takes place with the protrusion of the lips. The situation with regard to the velarisation of consonants in Irish dialects is illustrated in the following table, where + indicates [+velarised], – indicates [–velarised], ? indicates ambiguity or uncertainty in the relevant monograph description, and a gap indicates that a particular segment is not present in the relevant dialect (e.g. /l/ in IWM, IR, ICF). Where broad lenited and non-lenited sonorants have merged (e.g. IWM, IR, ICF), I use the upper case symbol to denote the result of the merger:

Velarisation of consonantal segments in Irish dialects						
	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**
/b p m v/	+	+	+	+	+	+
/L/	+	+	+	+	+	+
/l/				+	+	+
/N/	+	+	+	–	–	+
/n/				+	+	?
/r/	+	+	–	+	+	–
/t/	+	+	–	–	–	–
/d/	+	+	–	–	–	–
/s/	+	+	–	–	–	–

Table 1C.2

Table 1C.2 can be analysed as follows:

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**
No. of segments	10	10	10	12	12	12
No. velarised	10	10	6	8	8	7
% velarised	100	100	60	67	67	58

Table 1C.3

[42]In the case of younger speakers in IWM who have alveolar stops /t̪ d̪/ instead of the palatalised dentals /t' d'/ of older generations, the opposition appears to be based solely on the feature [+/– palatalised], see IWM: 34-7.

	No. of dialects in which attested	No. of dialects in which velarised	% of dialects in which velarised
/b p m v/	6	6	100
/L/	6	6	100
/l/	3	3	100
/N/	6	4	67
/n/	3	2	67
/r/	6	4	67
/t/	6	2	33
/d/	6	2	33
/s/	6	2	33

Table 1C.4

Tables 1C.3-4 provide the following hierarchical orderings, (A) the degree of velarisation interdialectally, and (B) the incidence of velarisation segmentally:

(A) IWM, IR >> IT, IE >> ICF >> DD

(B) b, p, m, v, L, l >> N, n, r >> t, d, s

The feature [+velarised] is prevalent in Munster dialects but less so in Connacht and Donegal, see IWM: 42, 46, 50; IR: 38, 47, 53. For Connacht and Donegal dialects labial segments and the sonorants /L l/ are velarised in all dialects. However, in the case of the segments //r N// there is some variation. If either of //r N// is velarised in these dialects then the other will be non-velarised. It is interesting to note that in IT, IE /n/ is velarised but not /N/. In western Cois Fhairrge (ICF: 118), however, both /n/ and /N/ are velarised according to de Bhaldraithe. All Donegal and Connacht dialects agree in that //t d s// are non-velarised segments. In Munster dialects /t d/ represent velarised dental stops (IWM: 36-7, IR: 26, 31-2).[43] In Connacht and Donegal dialects, however, /t d/ are generally not velarised. See ICF: 24; IT: 6; IE: 24; DD: 127, 131.[44] The segment /s/ is generally not velarised in Connacht and Donegal dialects. See ICF: 24, IT: 6, IE: 24, DD: 119. /N/ is not velarised in IT, IE and /r/ is not velarised in

[43]Breatnach (IR) prefers to use the term 'non-palatal' rather than 'velarised' to describe the broad consonants /d t l n/. That 'non-palatal' stands for 'velarised' can be seen in statements like the following: 'Non-palatals are those in the articulation of which the tongue takes up the position for a back vowel, usually an **u**-like vowel.' (IR: 26); 'Similarly, the non-palatal consonant phonemes include consonants . . . which . . . derive their non-palatal quality from the raising of the back of the tongue towards the u-position during their articulation (i.e. velarised consonants).' (IR: 26).

[44]Quiggin (DD) does not refer to 'velarisation' or the raising of the back of the tongue in his description of /t d/. I take this to mean that these segments are not velarised. Sommerfelt's account of the dialect of Torr implies that /t d/ are velarised when he states that 'the back of the tongue is raised' DT: 35. Hamilton (TY: 117, 156-7) unfortunately does not describe the manner of articulation of these segments. Instead he begs the reader to refer to the studies of Quiggin, Sommerfelt etc. TY: 117. We have seen that there appear to be conflicting accounts of the quality of /t d/ in Donegal dialects and so the phonetic quality of /t d/ in TY as described by Hamilton must remain unresolved for the present.

ICF. See ICF: 24, IT: 6, IE: 24. The segments /r/, /R/ are not velarised in DD. See DD: 94-5. Sommerfelt on the other hand seems to imply that /s/, but not [r], [R], is velarised in Torr (DT: 62, 81).[45]

/l/

In IR /l/ shows a further degree of velarisation in that it is commonly realised as a labio-velar fricative.[46]

//t' d'//

/t' d'/ represent palatalised dental (palato-dental) plosives in some Munster and Donegal dialects (IWM: 34-7, IR: 30-1, DT: 36, 38).[47] In some Connacht and Donegal dialects /t' d'/ represent alveolo-palatals (or palatalised alveolars) (ICF: 25-6, IT: 24, DD: 129).[48] However, according to our sources /t' d'/ represent affricates 'not very different from English' [dʒ] and [tʃ] in some Connacht dialects (IE: 36-7). Ó Dochartaigh (1987: 145-59), who provides a detailed account of affrication with particular reference to Ulster dialects, also notes affricated stops in some Ulster, including Donegal dialects. He also provides the most complete description to date of the geographical distribution of affricate stops in Irish dialects:

> An inspection of the Atlas materials reveals that africation of the palato-dental stops [t' d'] is widespread from North Galway northwards, being particularly common around the north west coast of Mayo. It is also found occasionally in the inland dialects of Leitrim and Sligo, contiguous with the South West Ulster dialect of Gleann Gaibhleann. (Ó Dochartaigh 1987: 148)

Of Ulster, he says:

> It is evident that the feature is one which is best established in the east and south of the province, with only fairly marginal effects on the Irish of Donegal, apart from the dialects of the south of the county and those of the islands, Aranmore and, to a lesser extent, Tory. (Ó Dochartaigh 1987: 151)

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[45]Sommerfelt (1965: 243-4) interprets [r] and [R] as allophones of the phoneme /R/.
[46]Breatnach (IR: 50-1) notes that 'the principal sound represented by /l/ differs very little from /ɣ/'. He goes on to say that 'for most speakers this /l/-sound is distinguished from /ɣ/ by its lip position. /l/ tends to be pronounced with a rather rounded lip position. The rather vague term "tense" seems also to be applicable to this sound: there seems to be a sort of tightening or constriction in the pharynx.'
[47]Ó Cuív (IWM: 35) notes that the dental /d'/ is the type used 'by older speakers in general, it is replaced with the younger speakers by an alveolar /d'/, similar to that used in English in words such as "din", "kid"' thus implying a recent phonetic shift in IWM in the realisation of /t' d'/.
[48]De Búrca (IT: 37) notes that some speakers tend towards affricate realisations.

Noting that 'full affrication of these palato-dental stops is widespread in North West Connacht and also in Scottish Gaelic dialects', Ó Dochartaigh (1987: 151) surmises that 'it is probably to these two areas that we should look for the source of the change in Ulster'. This requires some comment. Firstly, as we shall see below, the affrication of the palato-dental stops is not widespread in ScG dialects. According to the sources utilised in the present study, affrication is general only in peripheral dialects. Secondly, it is rather strange given the geographical distribution of the feature of affricativisation, with Ulster dialects situated at the centre of the distribution area, to suggest that Ulster dialects have been affected by the two peripheral extremities of the area of distribution. In his introduction to the chapter on affrication, Ó Dochartaigh seems to suggest that North Connacht is the most likely area for the source of 'the change'. He refers to the initiatory focus being 'in North Connacht, and *possibly* also independently in Scottish Gaelic, but which have spread from there to affect some dialects of Ulster Irish' (italics mine). A more satisfactory solution based solely on the distribution of the feature might be to suggest that the 'change' as Ó Dochartaigh puts it, may have originated in Ulster itself.[49] However, the possibility of the development arising independently in any or all of these areas, partially hinted at by Ó Dochartaigh himself, cannot be discounted especially when we consider the possible origins of affricates which can according to their nature arise in any place at any time.[50] Wagner's (1959: 10) suggestion that the development of these affricates should be attributed to earlier geminate stops is unsustainable. See Ó Dochartaigh (1987: 153) for criticism of Wagner on this point. Ó Dochartaigh (1987: 152) more plausibly explains the development of affricate stops as being due to a slowing down of the release phase of the stop which results in a fricative off-glide 'whose degree of audibility varies with its duration, being perceived as either a glide or as a full segment'.

It is implicit throughout Ó Dochartaigh's discussion of affrication that the original value of the phonemes /t' d'/ was pure palato-dentals.[51] One piece of convincing evidence for palato-dentals being the 'original' realisation in recent times at least is that affricates appear to be 'more common among the younger generation in Donegal than

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[49]There is, however, some evidence for linguistic shifts or changes originating in Scotland and spreading southwards into Ulster e.g. the shortening of unstressed long vowels. See Ó Dochartaigh (1987: 145-6).

[50]The naturalness of this development is hinted at by Ó Dochartaigh (1987: 153) when he states that it is 'to be considered a not unexpected development out of the previous articulation'.

[51] Similarly Ó Dochartaigh (1987: 158) refers to 'the presumed original allophonic norm [r'] for Donegal Irish'.

the older' who tend to have palato-dental articulations (Ó Dochartaigh 1987: 153). The fact that affrication is found in some dialects with the older generation (e.g. in Teilionn) merely illustrates that the shift to affrication is longer established there. See Ó Dochartaigh (1987: 153). The affricativisation of //t' d'// in Donegal dialects can be seen as part of a general increase in palatality of segments. We may compare the relatively recent change of //l'// > /L'/, //n'// > /N'/ in Donegal dialects referred to below in section F. This can be compared with general reduction in the palatality of segments in Munster dialects e.g. //t' d'// > [t̠ d̠], //L' N'// > /l' n'/. See section F below.

/b p/ ~ /b' p'/

Velarised and palatalised are used to describe the segments /b p/ and /b' p'/ respectively but one frequently gets the impression that these terms are used in a phonological rather than a purely phonetic sense. Very few authors refer to the actual raising of the tongue in the realisation of these segments. The following monographs refer explicitly to the raising of the tongue in the production of /b p/ and /b' p'/ (the back part of the tongue for the former and the front part of the tongue for the latter): IWM: 33-4, IE: 28 (/b' p'/ only), DT: 31 (/b p/ only). The following monographs use the descriptive terms velarised and palatalised respectively to describe /b p/ and /b' p'/: IR: 29 (/b p/ only),[52] IWM: 33-4, ICF: 25, IT: 23, IE: 28 (/b p/ only). Other monographs do not refer explicitly to velarisation, palatalisation or the raising of the tongue e.g. DD: 122-7, DT: 32 (in the case of /b' p'/ only); in such cases the distinguishing features appear to be the positioning of the lips rather than the tongue. Quiggin (DD: 122) describes /b p/ as having 'slightly protruded' lips; he describes /b' p'/ as being formed 'with the lips tightly drawn back on to the teeth' (DD: 124). Similarly Sommerfelt (DT: 32) describes /b' p'/ as being formed 'with the lips drawn tightly to the teeth'. He adds that 'the tongue rests in a neutral position'. The protrusion and rounding of the lips in the case of /b p/ and the spread (or neutral) lip position in the case of /b' p'/ is common in all Irish dialects, however. See IWM: 33-4, IR: 28-9, ICF: 25, IT: 23, IE: 28, DD: 122-7, DT: 31-2. One wonders if the use of terms such as velarised and palatalised, if they are not purely phonological terms, may not also have developed from an acoustic impression of the labials. It would seem perfectly reasonable to describe the distinctive features of the broad labials as [+rounded] ([–spread]), the slender labials as [+spread] ([-rounded]).

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[52]If we interpret 'non-palatal' as velarised. See IR: 26.

/v/

The realisation of the labial fricative /v/ varies in Irish dialects. In Munster and south Connacht dialects it represents a velarised bilabial fricative. See IWM: 39; IR: 36-7;[53] ICF: 30-1.[54] In other Connacht and Donegal dialects, /v/ represents a bilabial semi-vowel. See IT: 29; IE: 32; DD: 74-7;[55] TY: 138-9.[56]

Section D
The Consonant System of ScG

The phonemic inventory of ScG consonants may be set out as follows:

p	t	t'	k	k'	
b	d	d'	g	g'	
f			x	x'	h
v			ɣ	ɣ'	j
	s	ʃ			
m	N	N'	ŋ	ŋ'	
(ṽ)	n	n'			
	L	L'			
	l	l'			
	R				
	r	r'			

The maximal system of consonants in ScG dialects[57]

This represents the maximal system of contrasts possible for ScG dialects. It does not represent any known variety of ScG. The main departure from the maximal system presented above rests in the number of sonorant segments in individual dialects. The maximal quaternary system for nasals is attested only in EPG, GA, GK if we interpret /ŋ':/ as representing /N'/ (EPG: 109).[58] Scholarly attention has focused on lateral rather than nasal sonorant systems, and consequently perhaps, the maximal quaternary

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[53]Breatnach (IR: 36) notes that the allophone which occurs in absolute initial position when followed by a vowel is effectively a labio-velar semi-vowel.

[54]De Bhaldraithe (ICF: 31) notes that the allophone which occurs word initially before a vowel is a semi-vowel.

[55]Quiggin does not use the term 'semi-vowel'.

[56]In Connacht dialects especially, allophones which contain a certain amount of friction are also to be found, most notably in the vacinity of /l r/. See IT: 29; IE: 32.

[57]Cf. MacAulay (1992: 226-31), Ternes (1972: 10-95).

[58]Borgstrøm (1937: 119) in his brief discussion of 'traces of /l/ and /n'/' notes the possible occurrence of /l/ and /n'/ amongst old speakers in Barra. However, Borgstrøm only heard imitations of these sounds from speakers who claimed that older relatives used such sounds.

system has been reported more commonly for laterals than for nasals. Ternes (1972: 39) refers to such 4-l lateral systems in the dialects of Scarp (Harris) and Islay.[59] Oftedal (1975: 138) adds the dialects of Brenish (Lewis; only very old people) and Mangersta (Lewis) and notes that 'these dialects are spoken in almost contiguous areas'. Shuken (1980: 256, n. 1) adds the dialects of Kintyre[60] and one village on the island of Bernera, Lewis.[61] We may also add Barra if the comments of Borgstrøm (1937: 119) are reliable.[62] Ó Murchú's (EPG: 109) recent account of East Perthshire Gaelic describes four lateral phonemes /ɬ ɬ: l l:/.[63] Hamp (1970: 417) reports five laterals and five nasals for Islay.[64] The following sonorant systems exist:

Laterals[65]

Type A (GA, GK, EPG)

L	L'
l	l'

Type B (GL, DOH, S, R, ESG)

L	L'
	l'

Nasals

Type A (EPG, GA, GK)

N	N' (= ŋ')
n	n'

Type B (GL, DOH, S, R)

N	N'
n	

Type C (ESG, S)[66]

n	n'

Vibrants

Type A (GL, DOH, S, R)

R	
r	r'

Type B (GA)

r	r'

Type C (AP, GK)

R
r

Type D (ESG, EPG, GK, GA)

r

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[59]The latter by personal communication from D. Clement.

[60]Personal communication from D. Clement.

[61]Personal communication from D. MacAulay.

[62]Cf. Shuken (1980: 256).

[63]These contrasts occur only in the coda of monosyllables. In word-medial position, the contrast is reduced to /ɬ l/. EPG: 109.

[64]'Initially and finally in words there are only 4 distinctions' but word-medially we find the following oppostions according to Hamp (1970: 417): Lax: /ɬ/ (velar), /ʎ/ (palatal), /l/ (neutral); Tense: /L/ (velar), /L'/ (palatal).

[65]I have chosen the symbol /l'/ rather than /l/ to represent the lenited lateral phoneme in those dialects which have a ternary system. This is the symbol adopted by Borgstrøm. Borgstrøm (1937: 114) notes that 'the acoustic impression [of [l']] is not very palatal; it is fairly like an English "clear" l'. But cf. his later comment that '[l'] gives a slightly more palatal impression than in Lewis' (DOH: 163). Cf. also S: 39, R: 97, GA: 31, GK: 30. Oftedal (GL), however, uses the symbol /l/.

[66]The distinction between /N/ and /n/ is collapsed in some Skye dialects e.g. Kilmuir (S: 36).

It is clear that the most common sonorant system is a ternary one. I have followed Holmer (GA, GK) here in adopting 4 laterals and 4 nasals for GA and GK. However, since his studies of GA and GK are not strictly phonemic descriptions, the phonemic status of the nasal and lateral phones must remain in doubt. See Ternes (1972: 40, n. 1), Ó Murchú (1969: 340). I have included Arran under types (B), (C) and (D); these represent sub-systems within Arran. Holmer (GA: 33) notes that 'it is only a few speakers . . . who uses this sound [r']'. He goes on to state that 'the majority of Gaelic speakers in Arran use a plain [r]' (ibid). A further subsystem of vibrants /R/~/r/ may hold for some GK dialects. Holmer notes that '[R] is decidedly a rare sound in Kintyre' and that 'in reality it is difficult to hear much difference between their [R] and [r]' (GK: 31). He notes that 'the only speakers who use, or claim to use it' are 'good Gaelic scholars' (GK: 31). This evidence might imply that [R] belongs to high registers of Kintyre Gaelic. From the above discussion it is reasonable to assume that only one /r/ phoneme is the norm for GA and GK.

The phonemic interpretation of the velar and mediopalatal nasals [ŋ ŋ'] varies according to dialect. In most cases they appear to be allophones of /N/ or /N'/. They are, according to Oftedal, allophones of /N/ and /N'/ respectively in GL (: 121, 123). Ternes (1973: 18, n. 2), contrary to Oftedal, analyses [ŋ ŋ'] as allophones of /N/ because in both cases 'the main articulation is velar'. In DOH: 173, they only occur before the segments /g g'/ and so are best analysed as allophones of /N/ and /N'/ respectively. In Skye, as well as occurring before /g g'/, they also occur 'independently' and so must be analysed as separate phonemes (SR: 35-6). Borgstrøm does not discuss the occurrence of [ŋ ŋ'] in Ross-shire dialects. The only example which he quotes is *iongantach* which has [ŋg] (SR: 145); this may imply that [ŋ] is an allophone of /N/. Cf. Ternes (1973). In GA [ŋ ŋ'] seldom occurs except before velar and palatal stops (GA: 22-3) which would imply that both are variants of /N/ and /N'/ respectively. However, [ŋ'] occurs word finally e.g. *abhainn, creidsinn* in which case it alternates with [n'] (GA: 22). In such cases [ŋ'] could be analysed as an allophone of /N'/. The situation is similar in Kintyre (GK: 23-4). However, [ŋ] does apparently occur independently in word medial position in *teanga* in the speech of at least one speaker from the south end (GK: 39). Dorian analyses [ŋ] (and [ŋ']?) as an allophone of /n/ as it occurs only before the segments /k g/ (ESG: 44).[67] In EPG [ŋ(:)] occurs only before the segment /g/ and is therefore analysable as an allophone of /N/;[68] [ŋ'(:)] on the other hand occurs 'independently' in word medial and word final position

[67]Note that there is no phonemic opposition between /k g/ and /k' g'/ in ESG.
[68]Ó Murchú uses the symbol /n/.

(EPG: 107, 109) and corresponds to both /N'/ and /N'g'/ in other dialects. [ŋ':] and [n'] are in complementary distribution; [ŋ':] occurs only after front vowels, [n'] only after central and back vowels (EPG: 107). These phones could in some varieties be analysed as variants of the phoneme /n'/. However, this is not plausible for some more eastern varieties. See EPG: 107-8 for details.

ESG deviates further from the maximal system presented above in that there is no phonemic contrast between velar and palato-velar stops (ESG: 40, 42).

Labials

The issue of the phonemic opposition between palatalised and non-palatalised labials in ScG dialects has been discussed extensively although the matter has not been conclusively settled for the majority of dialects. Sommerfelt (1957), Jackson (1967), Oftedal (1963) all argue that phonemic palatalised labials are not a synchronic feature of ScG generally. Ternes (1973) argues this stance convincingly for the dialect of Applecross (AP: 32-52) but notes that 'for other dialects, the problem will have to be reconsidered, because the phonetic data involved vary to some extent from one dialect to another' (AP: 33). MacAulay (1962, 1966) disagrees with the traditional view and argues in favour of the phonemic palatalisation of labials. Ternes (1973) argues convincingly against MacAulay, referring to universal principles of phonemic analysis and also 'more specifically to the internal phonemic and morphophonemic system of Sc.G.' (AP: 38). In the absence of detailed phonological analyses of this matter for dialects other than Applecross and Bernera, I have taken the traditional and majority view that palatalised labials are not phonemic in ScG.

Stops and nasals

In the consonantal inventory presented above, I have not taken into account the additional set of stop and nasal consonants which can occur word initially as a result of the initial mutation which is usually referred to as nasalisation. There are three types of nasalisation which can be classified according to the phonetic realisation of nasalised stops. Type (A) results in a set of voiced stops which we may denote as /B D D' G G'/. Type (B) results in a set of voiced stops /B D D' G G'/ and a set of voiced postaspirated stops /B^h D^h D'^h G^h G'^h/. Type (C) results in a set of what are effectively prenasalised stops /M^{ph} N^{th} $N'^{t'h}$ $ŋ^{kh}$ $ŋ'^{k'h}$ M^b N^d $N'^{d'}$ $ŋ^g$ $ŋ'^{g'}$/. See Ó Maolalaigh (1995/96: 159-60) for more details and references.

The existence[69] of phonemic nasalised labial fricatives /ṽ, ṽ'/ in the majority of ScG dialects, however attractive in phonological terms, is questionable for the reasons stated above for Irish. Ternes (1973: 131-3) also prefers to attribute nasality to vowels rather than consonants. He concludes in the case of Applecross at any rate that 'the alternative of attributing nasality to consonants rather than vowels has to be discarded' (ibid). However, Ternes does not appear to have been aware of Holmer's observations on Arran Gaelic which would seem to argue for nasalised labial fricatives in some dialects of Arran. Holmer notes:

> Nasalisation of consonants is not seldom found. In the case of an *mh* turning into a *v* or an *n* into an *r*, it often seems that the nasalisation covers also the *v* or *r*, or even, in the case of *v*, is more marked in the consonant than in the vowel. (GA: 36) (italics mine)

Holmer provides the following examples: *ag amharc* [ə gaṽərk], [gãṽərk], *Cnoc Reamhar* [krɔ̃k rɛṽər], *amhsan* [avs̃aN], *t(s)amhailt* [taṽaltʃ] (GA: 36).

Distribution

All fricatives occur word initially (usually as morphophonemic variants of initial segments), word medially and word finally although the velar and labial fricatives /ɣ/ and /v/ are not common in all dialects intervocalically.[70] Borgstrøm (DOH: 144, 158) notes that intervocalic /v/ is more frequent in Harris than other Outer Hebridean dialects. In Arran /ɣ/ is 'almost entirely restricted to initial position' (GA: 28); word medially and word finally original //ɣ// has been strengthened to /g/ (GA: 69). In Kintyre /ɣ/ occurs word initially and word finally but is rare word medially (GK: 27). In ESG the fricative /ɣ/ and the semi-vowel /j/[71] occur only word initially (ESG: 40); the labial fricative is rare in postvocalic position (ibid).

We have already referred to the phonemic status of the velar and mediopalatal nasals [ŋ ŋ']. In dialects where these are phonemic they occur word medially and word finally. See SR: 35-6.

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[69]Suggested by MacAulay (1992: 227).

[70]See DOH: 156, 158; SR: 34-5, 92-4, EPG: 109. In GL /ɣ/ is common in all positions (GL: 114-5); however, /v/ is less common word medially and word finally (GL: 111-2). Although /ɣ v/ occur word medially in EPG, they are not common in this position; the fricatives /ɣ ɣ' v/ do not occur in the codae of monosyllables or weakly stressed syllables (EPG: 106, 110). For further discussion of the retention of fricatives, see chapter 8.

[71]Dorian uses the symbol /y/.

Distinctive features

The series of stops /p t k t' k'/ are differentiated from /b d d' g'/ by the feature of [+/–aspiration]. All stops are generally voiceless. Voiced or partially voiced stops do, however, occur (a) word initially as a result of the initial mutation of nasalisation, (b) word medially in contact with voiced consonants. /t d/ are dental stops in all varieties of ScG; alveolar stops do occur, particularly in loanwords. See GA: 16-7, GK: 17-8.[72] /t' d'/ represent affricates [tʃ], [dʒ] mainly in peripheral dialects (GA: 28-9, GK,[73] ESG: 41, EPG: 102)[74] but usually alveolo-palatals in central dialects. Where alveolo-palatals do occur, they are usually accompanied by short fricative off-glides, similar to, but different (usually shorter in duration) from the corresponding phonemic fricatives (GL: 106, DOH: 155, S: 34). In such cases such off-glides appear to be phonemically insignificant. Borgstrøm notes that 'palatal dental occlusives are not followed by any strong glides' in Ross-shire dialects (R: 91).[75]

The labial stops /p b/ are described as being merely (bi)labial similar to English labials (GL: 102, GA: 15, GK: 15, ESG: 41, EPG: 102). Oftedal notes that the labial stops are produced with spread lips in contact with high front vowels (GL: 102).

Oftedal (GL: 111) notes that 'it is somewhat difficult to decide whether they [/v/ and /f/] are bilabial or labiodental because of what Borgstrøm calls "a certain looseness of articulation" D.O.H. p. 63'. Borgstrøm (DOH: 158) also states: 'on account of its rather open articulation it cannot be described as distinctly either bilabial or labiodental, though — at least in Barra — it is usually a kind of bilabial articulation without any protrusion or rounding of the lips.' Borgstrøm (S: 35) notes that the fricatives /f v/ both have a tendency 'to be bilabial in combination with back vowels and labiodental in combination with front vowels'. Borgstrøm (R: 94) adds that /f v/ are 'neither clearly bilabial nor labiodental'. Otherwise /f v/ are described as labio-dentals (GA: 24, GK: 24, ESG: 42, EPG: 103). All descriptions of ScG dialects agree, however, in describing /f v/ as fricatives as opposed to approximants.

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[72]Alveolar [t d] are not reported for all dialects e.g. GL.

[73]Holmer (GK) does not discuss affricates in his description of Kintyre Gaelic. However, historical //t' d'// are frequently represented by the symbols [tʃ], [dʃ] (cf. *bailtean, maide, maidinn* GK: 40). In his account of Arran Gaelic, Holmer points out the difficuly of analysing [tʃ], [dʃ], [dʒ] as affricates or as sequences of alveolar [t], [d] plus fricatives [ʃ], [ʒ] (GA: 28). He nevertheless settles for the term affricate 'for practical purposes'. Since there is unlikely to be any structural differences between Arran and Kintyre dialects with respect to these sounds, I have interpreted them as affricates. Alveolo-palatals do, however, occur as allophones following the segment /ʃ/ (GA: 17-8, GK: 18).

[74]Dorian and Ó Murchú use the affricate symbols /č ǰ/.

[75]We can assume that this holds for Applecross also. Ternes (1973:) refers to /t' d'/ as 'dental palatalised'.

Velarisation

The feature [+velarised] usually applies only to the segments /L N R/ in ScG dialects (GL: 121, 123, 126; DOH: 159, 162, 164; S: 36, 38, 39-40; R: 95, 97, 98; GA: 30; GK: 21, 27, 29; ESG: 44, EPG: 104). In GA and GK the segment /l/ is also velarised (GA: 30, GK: 29). Departures from this include ESG /l/ and EPG /n:/ (= our /N/) which are not velarised. In ternery and quaternary nasal systems, /n/ is usually neutral i.e. [–velarised], [–palatalised] (GL: 121, DOH: 160, S: 37, R: 95, GA: 21, GK: 22, ESG: 44, EPG: 104).

In ternary and quaternary lateral systems /l'/ is usually slightly palatalised (DOH: 163, S: 39, R: 97, GA: 31, GK: 30). However, it appears to be neutral in GL: 125, ESG: 44, EPG: 104.

/r'/

/r'/ represents a wide variety of realisations. It can represent:

(a) an interdental fricative [ð] (GL: 129)[76]
(b) palatalised alveolar fricative (DOH: 165, GA: 33?)
(c) palatalised alveolar tap (S: 40-1, R: 99)[77]
(d) palato-alveolar approximant (R: 99)

Section E
Comparison of Irish and ScG Consonant Systems

The phonemic inventory of consonants in Irish and ScG dialects is on the whole very similar. The sonorant systems do, however, vary internally in both Irish and ScG dialects with the most reduced systems occurring in peripheral areas e.g. Munster, ESG. In addition, phonemic /ŋ ŋ'/ occur more frequently in Irish than in ScG dialects. These differences along with differences in the labial (stop and fricative) systems constitute the major differences in phonemic consonantal inventory between Irish and ScG. There are differences also in terms of phoneme distribution, particularly with

[76]Although in GL an alveolar palatalised fricative occurs word medially following palatal consonants (GL: 129).
[77]/r'/ has two main allophones in Ross-shire according to Borgstrøm (R: 99), one of which is a palatalised alveolar (possibly dental) tap, the other a palato-alveolar approximant.

reference to the fricatives /ɣ ɣ' x'/, which unlike ScG, do not usually occur word medially or word finally in Irish dialects. Irish and ScG dialects differ in the set of distinctive features which are deployed to distinguish stops. In Irish the distinguishing feature is [+/–voice] whereas in ScG it is generally [+/–aspiration]. Furthermore, the incidence of a particular feature (e.g. [+velarised]) may differ in the range of consonantal segments to which it applies. The feature of [+/–velarised] applies to all consonantal segments in some Munster dialects. The incidence of this feature becomes less common the further north we proceed. In Connacht and Donegal dialects the segments /t d s r (N)/ may be neutral. In ScG dialects the feature of [+velarised] applies only to the segments /L N R/. We will see in our discussion of the individual vowel segments how the presence or absence of this feature has fundamentally affected the historical phonology of the short vowels of Gaelic.

Section F
Historical Development of the CG consonantal system

The main developments in the CG consonantal system have been:

(a) the loss of the dental fricatives //θ//, //θ'//, //ð//, //ð'//
(b) the loss of //R'//
(c) the reduction of the sonorant system generally
(d) the loss of palatalised labials in ScG
(e) the loss of nasalised labial fricatives //ṽ//, //ṽ'//
(f) changes in the nature of the opposition C ~ C'
(g) the reduction of NC[+voice] clusters

(a) The dental fricatives //θ//, //θ'//, //ð//, //ð'//

O'Rahilly in his pioneering article on Middle Irish pronunciation, having considered the treatment of Irish dental fricatives in Irish, English, Welsh, Icelandic and French sources of the 12th, 13th and 14th centuries, concludes:[78]

[78]His article deals mainly with the development of the dental fricatives as evidenced in English and Anglo-Norman sources.

> To sum up the results of the preceding investigation, *dh* slender was in certain circumstances beginning to be confused with *gh* slender by the beginning of the twelfth century, or even earlier; nevertheless there is no doubt that a century later *dh* and *th* in general still preserved their dental character. It was during the course of the thirteenth century that the great transformation in their values took place; and by the year 1300 it is likely that the dental spirants were things of the past in the greater part of Ireland, except perhaps, among a learned few. (O'Rahilly 1930: 192)

He adds:

> The change [//θ//, //θ'// > /h/, //ð// > /ɣ/, //ð'// > /ɣ'/] was naturally a slow one, and probably extended over two or three centuries. It was doubtless accomplished sooner in the speech of the common people than in that of the learned. But eventually even the professional literary classes, with all their conservatism, had to accept it, as we see from the difficulty that learned fifteenth-century scribes found in knowing when to write *dh* and when to write *gh* . . . . From the fourteenth century *dh* has been completely merged in *gh*, and its history is the history of the latter.... Initial *th* passed from *θ* to *h*, its present sound. In other positions its normal sound is *h* likewise . . . . In certain dialects of the Northern half this *h* tends to disappear . . . . Frequently, however, non-initial *th* never became *h*, but passed into one of the other voiceless spirants [//θ// > /x/, //θ'// > //x'/]. (O'Rahilly 1930: 194-5)

As O'Rahilly (1930: 192, n. 98) himself points out, further research will provide more precise results. Unfortunately, very little research along the lines of research initiated by O'Rahilly has been carried out since his own study. Further research will most likely show that the development of the dental fricatives may not have been as straight forward as first envisaged by O'Rahilly in 1930. There is some evidence in his later 1932 study that O'Rahilly was aware of this. In his 1930 article, he seems content, for instance, to talk in terms of *dh* being 'completely merged in *gh* and its history is the history of the latter'.[79] However, in his 1932 book on Irish dialects, he acknowledges that the dental fricative //ð// may not in all cases have merged with the velar fricative //ɣ//:

> As far back as the thirteenth century *dh* lost its dental character, and became everywhere a gutteral spirant (*gh*) or, rarely a labial spirant (*v*). (O'Rahilly 1932: 65)[80]

> In Northern Irish *-adh* became first *-av*, *-uv*, and then (when non-palatal *v* had become *w*) *-ú*, which in Ulster may be shortened to *-u*. (O'Rahilly 1932: 66)[81]

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[79]Compare: 'Once *dh* had lost its dental character, and had become merged in *gh*, it not infrequently passed soon after into *v*.' (O'Rahilly 1930: 185).

[80]It is not entirely clear whether or not this statement implies the intermediate stage of //ð// > /ɣ/ in cases where //ð// has yielded /v/.

[81]Compare O'Rahilly (1930: 194-5) where it is implicit that the development in this case was -ð > -ɣ > -v. Although, to be fair, he does note 'two place names which seem to show the possibility of dh becoming v at a time when its normal pronunciation was still ð.' (O'Rahilly 1930: 185). Compare also Sommerfelt (1927: 231, §191): 'In the verbal noun this -adh has in Donegal . . . developed into -uw, passing through the stage -əɣ.' Cf. Henebry in *Corr in Aghaidh an an Chaim*, p. 63 where he seems to suggest the development -/ð/ > -/v/ > -/g/ for Munster dialects, quoted in Bergin (1912).

In some cases, where original dental fricatives have yielded labial fricatives, there is no need to posit an intermediate stage involving the velar fricatives /ɣ/, /ɣ'/.[82] The dental and labial fricatives are acoustically similar and the 'direct' substitution of the latter for the former is quite natural in phonetic terms. For early examples, see Breatnach (1994: 234-5).[83] It is implicit in O'Rahilly's discussion of the development of the dental fricatives //ð ð'//, although he does not use the term, that he viewed the change //ð/ð'// > /ɣ/ɣ'/ as an unconditioned phonological change. Although there is insufficient evidence to prove it at present, it is possible that these changes may originally have been phonologically conditioned.[84] In particular, it is conceivable that the change //ð// > /ɣ/ may first have occurred in the vacinity of the labialised vowels //u o// and that //ð'// > /ɣ'/ may have occurred first in the vacinity of the palatal vowels //i e//. We may note that the change //ð// > /ɣ/ also occurred in Old Norse but only in the environment / u __ u, see Gordon (1927/81: 280). Only further minute research on the early literary sources, both Gaelic and non-Gaelic, will clarify the suggestion of a staggered development in the case of //ð/ð'// > /ɣ/ɣ'/ and also //θ/θ'// > /h/.

It is worth noting, though we have no way of dating the origin of the statement, that the seventeenth century introductory tract of the *Irish Grammatical Tracts* states categorically that *dh* and *gh* have the same value:[85]

> **Fíachuidh** duir go n-úathadh, as ionann gáoidhealg dhó 7 d'ainm iollraidh **Fhíachach** .gh., 7 ní hionann ogham. (Bergin 1916: §87)

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[82]Cf. Breatnach (1952: 51) who notes 'but that does not mean that every historical voiced dental spirant became *j* or *ɣ'*. Cf. C. Breatnach (1990).

[83]Breatnach (1994: 235) suggests that the change //ð'// > /v'/ must be a dialectal feature. If so, then it is worth noting that the change is attested more commonly in modern Connacht dialects than in any other Gaelic dialects. Cf. *guidhe* /giv'ə/, ICF: 100, *eidheann* /ev'əN/ ICF: 100, IT: 29, *Mhag Uidhir* /ə giv'ir'/ IE: 148. But the change is also attested outside this area, e.g. Glasnevin (Dublin) from Irish *Glas Naoidhean* (spelled Glasneyvin c. 1230, see O'Rahilly (1930: 185)). *Guibhe* (< *guidhe*) is also used by eighteenth and nineteenth century Munster poets. However, the use of *guibhe* /giv'ə/ in such instance instead of the expected /gi:/ is always used for metrical reasons; it frequently provides the required assonance with disyllabic words of the shape CiC'ə(C). See '*guibhe chun Muire*' Ó Foghludha (1932: 46, §128). The use of *guibhe* in Munster accentual verse is unreliable as evidence for the development //ð'// > /v'/ in Munster dialects since the use of variant forms in accentual assonantal verse which are not in accordance with intradialectal pronunciations is well known. For example, the digraph which is normally realised as /e:/ in Munster dialects and as /i:/ in Connacht and Ulster dialects may be realised as /i:/ and /e:/ in song registers in all parts of Ireland. Cf. Ó Cuív (1979: 116).

[84]Cf. our discussion in chapter 8 of the vocalisation and retention of fricatives word internally, which we argue must have occurred in implicationally scaled stages.

[85]This is also implied in the seventeenth century *Rudimenta Grammaticae Hibernica*, Mac Aogáin (1968: 6 ff.).

O'Rahilly's preliminary remarks on the history of the dental fricatives do not take account of morphological factors or the possibility of analogy and back formations. Such factors are necessary to explain satisfactorily the development of the imperative second person plural (*-aidh*) for instance in both Irish and ScG. See Bergin (1912), Ó Máille (1913), Sommerfelt (1923), O'Rahilly (1932: 58-64), R. A. Breatnach (1952), Ó Murchú (1984). Similarly, the changes *léigh* > *leubh* 'read', *éigh* > *eubh* 'shout' in modern ScG are unlikely to represent straightforward phonological developments. They are most likely based on syncopated forms derived from verbal nouns *lé(i)gh(e)amh, éigheamh.*[86]

The deletion of final unstressed //ð// in Munster dialects can be explained in a number of ways: (1) phonetic change, (b) morphological replacement, (c) sandhi. The deletion of //ð// may be explained as a purely phonetic change in two ways: (a) the reduction of //ð// to Ø, with or without the interediate stage of /ɣ/; (b) the devoicing of //ð// to /θ// with subsequent reduction to /h/. The latter suggestion has been put forward by R. A. Breatnach (1952: 52, n.3).[87] Against this, it should be said that there is no other evidence for the unvoicing of final unstressed consonants in Munster dialects. The change //ð// > Ø in Munster dialects in verbal noun endings *-adh*, rather than representing a phonological change, could well have been morphologically motivated. Variation in verbal noun endings is well-attested in Gaelic e.g. *teicheadh: teicheamh, leiciud: lecun, athladh: athlamh, déanamh: déanagh* etc. Given such variation, it is conceivable that the set of verbal nouns with final *-a* historically (mostly verbs containing the verbal root *-ben*) may have influenced the development of verbal nouns with final *-adh*. There is clear evidence that the prevalence of *-adh* verbal noun endings affected verbal nouns with original final *-a* e.g. *sechna, cumma, caemna, slaide, tuba* etc. as these have in most cases been replaced by *-adh* endings in the modern dialects e.g. *seachnadh, cumadh, caomhnadh* (Irish, ScG). R. A. Breatnach (1990: 39) lists the following variants, mostly from Classical Irish: *labhra: labhradh* (< Old Irish *labrad*), *eachra: eachradh* (< Old Irish *echrad*), *oba: obadh* (< Old Irish *opad*), *teibe: teibeadh* (< Old Irish *teipe*), *peacadh: peaca* (< Old Irish *peccad*), *ionnarbadh: ionnarba* (< Old Irish *indarpae*), *tinnmheadh: tinnmhe, caoineadh: caoine.*[88] It is not unreasonable to suggest that the existence of verbal nouns ending in

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[86]For a discussion of ScG *leugh*, see Gillies (forthcoming). For syncopted forms, see *éighmhear, ro héighmheadh* (Breatnach 1996: 74).

[87]R. A. Breatnach supports his hypothesis by quoting instances of *dh~th* alternations in Middle Irish sources. The importance and significance of such alternations, particularly in unstressed syllables remains to be fully assessed. Cf. C. Breatnach (1990).

[88]Cf. McManus (1994: 353).

-a may have affected the development of *-adh* in Munster dialects.[89] The possibility that *-adh* > *-a* may have occurred originally in sandhi is also likely to have been a motivating factor. In particular, the fricative may have been dropped at word boundaries when followed by a word with consonantal onset.[90]

Much work remains to be done in tracing the development of the dental fricatives, especially in Scotland, the historical development of which will not be fully understood until the largely untapped lexical and onomastic sources containing Gaelic words in non-Gaelic contexts, mostly Scots and English, are investigated. Some work of this nature has been done in these areas in recent years, e.g. Pödör (1993, 1996), Taylor (1995), Gillies (1996), Ó Maolalaigh (1997). Taylor (1995: 43), based solely on place-name evidence, concludes that the voiceless dental fricative /θ/ was reduced in Fife some time during the thirteenth century. Jackson (1951: 83) notes that *'th* became *h* in the course of the thirteenth century, though it may possibly have begun slightly earlier in Scotland'. Jackson is here referring to the possible phonetic spelling *a hule* for *a thule* in the Gaelic notes of the twelfth century *Book of Deer*, see Jackson (1972: 55, 63).[91]

The changes //θ/θ'// > /h/ and //ð/ð'// > /ɣ/ɣ'/ are attested in all varieties of Gaelic. It is perhaps remarkable that the voiceless dental fricatives did not completely merge with the voiceless velar fricatives as happened in the case of the voiced dental fricatives. Original //θ//, //θ'// do, however, yield /x/, /x'/ respectively in some words in both Irish and ScG, e.g. *bráth* /x/ IT: 19, Borgstrøm (1937: 222);[92] *ith(e)* /x'/ IT: 129, DOH: 220. //θ// yields /f/ in some Irish dialects, particularly following original //u// e.g. *guth, cruth, gruth* IT: 130. The development //θ'// > /f'/ is not attested, so far as I am aware. The reduction of the voiceless dental fricative to /h/ is analogous to the reduction of /f/, /x/, /x'/ > /h/ in Gaelic. The phonological/phonetic change /f/ > /h/ in Gaelic has been questioned by a number of scholars, e.g. Gleasure (1968:85), Quin (1969: 38), Ó Buachalla (1985:2-9). However, Ó Sé (1990: 135) illustrates conclusively that there is sufficient evidence 'to confirm *f* > *h* as a minor sound change in Irish'. On the

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[89]The change *-adh* > *-a* is also attested from some Leinster dialects in noun and verbal morphology. See Williams (1994: 472-4). The development *-adh* > Ø in some eastern ScG dialects must have involved the intermediary stage *-adh* > *-a*. Cf. *deireadh* /d'er/ 'end' etc. EPG: 326.

[90]Sandhi phenomena remain a relatively understudied area of Gaelic language studies.

[91]Jackson (1972: 55) himself notes that *'hule* for *thule* may well be due to a mere inadvertent omission of the the *t'*. Cf. *ó hunn* for expected *ó shunn* (ibid) which is also open to two interpretations, namely *h* to indicate /h/ or *s* has inadvertently been dropped.

[92]The development //θ// > /x/ is particularly common in south eastern Irish dialects, e.g. IR: 137 where this development appears to be regular in final position in monosyllables.

reduction of /x/, /x'/ in Ulster dialects, see Ó Dochartaigh (1987: 122-59). The reduction of /x/ to /h/ is particularly common in Ulster Irish and in some south west ScG dialects. See O'Rahilly (IDPP: 210), GA: 27, 80, GK: 27, Holmer (1938: 87-8), Ó Dochartaigh (1987: 122-44). For Ulster, Ó Dochartaigh (1987: 141) concludes that

> in diachronic terms, we can suggest that the /x/ weakening did begin in the most vocalic environment, and spread from there to affect the segment in final positions . . . . The process also seems to have affected segments in unstressed position earlier than in stressed syllables and this is to be expected in general phonetic terms, as the unstressed syllable articulations are generally laxer than those found in stressed position.

The segment /x'/ does not occur frequently in word medial or in word final position in Irish. A search of Ó Dónaill's dictionary (FGB), using the Gléacht package shows that there are only 4 words with final *-ich* in Irish, namely *braich, cluich, deich, sroich*. There are less than c. 100 words with word internal *-ich-*, many of which share the same underlying morpheme, e.g. {*cluiche*}, {*ficheall*} etc. Original //x'// is represented by the segments /x'/, /h/, /f/ in modern Irish dialects and by /x'/ usually in ScG:

	IWM	**IR**	**ICF**	**IT**	**IE**[93]	**DD**[94]	**TY**
#__	x'	x'	x'	x'	x'	x'	x'
fiche	h	h	/f'i(:)/[95]	x'	x'	h	h, x'
droichead	oh	--	e:d[96]	h	h	x'	h
cluiche	--	--	f'	f'	f'	x'	h, x'
doicheall	--_	--	f'	f'	f'	x'	h

Table 1F.1: Development of //x'// in Irish dialects[97]

(b) the development of //R'//

We have already noted that most, if not all, scholars advocate a quaternary system for the *r*-phonemes in earlier stages of the language //R R' r r'// although it may be noted that this four-point system has nowhere survived in its entirety in the modern dialects (Ó Murchú: 1989a: 143). Consequently there can be no certainty with regard to its original phonetic realisation. It has been assumed that nonlenited //R//, like //L//, //N//

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[93]//x'// is usually dropped following /i:/ in IE: 158.

[94]//x'// normally yields /x'/ but /h/ in a few words, see DD: 68, 118. //x'// is usually dropped after a long vowel or diphthong, see DD: 118.

[95]Intervocalic //x'// has been dropped generally in ICF: 102-3. But /h/ is in some words retained e.g. *fliche* (ICF: 103).

[96]Recall that intervocalic /h/ is regularly lost with coalescence of syllables in ICF.

[97]Initial //x'// is usually realised as /x'/ in all Irish dialects, the word *cheana* being a well-known exception which is generally realised in Irish dialects with initial /h/. ScG on the other hand generally has /x'/ here. See PDSG: s.v. *(a) cheana*.

and all other consonants (except /h/) also developed a palatal congener //R'//. Ó Murchú (1986: 21) argues that //R'// merged with //R//[98] quite early on but offers no date for the development other than that it occurred before the breaking of /e:/ to /ia/ in Munster Irish dialects. Ó Murchú (1989a) expands somewhat on his earlier paper. He refers to Greene's (1977: 159) comment that the development [R'] > [R] 'is certainly earlier than the seventeenth century'. Greene offers no support for his view and Ó Murchú (1989a: 143) speculates that 'it had possibly been inferred from O'Rahilly's information (1932, 31) that spellings such as *raod* for *réad* occur already in a fifteenth century vellum MS (RIA 23 P 20)'. Ó Murchú (1989a:145) adds that 'given its universal application geographically [i.e. /R'/ > /R/] . . . Greene's later limit must be regarded as erring on the side of caution'. Later he concludes that /R'/ > /R/ 'was not later than the fifteenth century and may well have been established a considerable time before then' (Ó Murchú: ibid).[99] Ó Murchú, in support of an early date for the merger of //R'// and //R//, could have cited the lowering of //e// to /a/ following initial *r-* which is attested from the twelfth century e.g. *rech-*, *reg-* > *rach-*, *rag-* (Breatnach 1994: 233-4). McManus (1994: 346), citing the further examples of *remor* > *ramhar, recht* > *racht*, explains the lowering of //e// to /a/ in following initial *r-* as being due to the depalatalisation of //R'// > /R/. If this hypothesis is correct, the merger of //R'// and //R// can be dated to some time during or before the twelfth century. For an alternative explanation of the lowering of //e// following initial *r*, see the discussion below. Against a pre-twelfth century date for the merger of //R'// and //R//, one could cite regular orthographical forms *-irr(e-)* throughout the Early Modern period e.g. *cuirreach* (Modern Irish, ScG *currach* 'marsh') which may imply the existence of an /R'/ phoneme, word medially in some dialects at least, during the Early Modern period.[100] See DIL s.v. *cuirrech*. It is, of course, possible that *cuirreach* represents no more than an inherited conservative spelling. Alternatively, it is possible that the retention of a palatalised non-lenited /R'/ phoneme in Classical Irish represents a conservatism similar to the dental value which was arguably given to

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[98]Cf. Borgstrøm (DOH: 207), Greene (1977: 159).

[99]If the genitive singular form *Marr* for **Mairr* occurring in the twelfth century Gaelic notes in the *Book of Deer* is trustworthy, it could be implied that the change //R'// > /R/ may be as old as the twelfth century in some eastern ScG dialects. Jackson (1972: 128) notes that 'whether so early is uncertain'. Alternatively, this form could be taken as evidence for the non-existence of a /R'/ phoneme in some eastern ScG dialects in the twelfth century. However, the form *Marr* may ultimately be unreliable. It could be a scribal error for an intended *Mairr* or alternatively it could conceivably represent *Mairr* with the palatal on-glide not shown. However, it should also be added that it is not absolutely certain if *Marr* represents the place-name *Marr* rather than *Már*. If the latter, this form implies that //a// had been lengthened before //R// already by the twelfth century. See Jackson (1972: 128) for discussion.

[100]*Cuirreach* occurs in the *Irish Grammatical Tracts*, Declension §23 (sixteenth century).

the fricatives *dh*, *th* during the same period. However, the early orthographic evidence, such as it exists, would seem to support the existence of a palatalised non-lenited //R'// phoneme for it is otherwise difficult to explain consistent *-irr(e)(-)* spellings in our sources. On the palatalisation of *rr*, Bergin (1907: 82) concludes that 'there are very few instances. From such as occur, *rr* is seen to be palatal after a palatal vowel — not, as in Mod. Ir., always non-palatal.' Bergin does not provide a list of examples but he presumably refers to cases like *girre* where the final *-e* rather than *-ae* would seem to support a palatalised *rr*. Cf. also *cuirreach* above.

No satisfactory explanation of the alleged merger of //R'// and //R// has been advanced to date. However, it is reasonable to assume that the shared feature of [+tense] must have been the inducing factor which ultimately led to the redundancy of the feature [+palatalised]. The loss of palatalised //R'// may have been due to a difficulty of articulation in sustaining a palatalised trilled vibrant. In support of the merger of //R'// and //R//, it should be added that instances of //R'// appear to have been relatively rare in the lexicon of earlier stages of the language and therefore that the functional load of the opposition //R'//~//R// was quite low. We argue below that //R'// may never have developed in //RC'// clusters and perhaps also in word initial position. The neutralisation of both //R// and //R'// in favour of //R// in certain positions, for instance in //RC'// clusters, no doubt also reinforced the low functional yield of //R'//.

The development /R'/ > /R/ is not unique in Gaelic phonological terms even though the development of the consonantal system has on the whole tended not to merge consonants of opposing quality. It is true that //n// and //n'// have merged in some ScG dialects but this change may well be a fairly recent one, see below. Compare also the relatively late merger of /r/ and /r'/ as /r/ in some peripheral ScG dialects, e.g. ESG. Cf. AP. If the existence of phonemic palatalised labials is accepted for an earlier stage of ScG, then the merger of /b/~/b'/ > /b/ etc. provides another example of the merger of consonants of opposing quality.

Given the general phonologically conservative nature of Ulster and many Hebridean ScG dialects, it is tempting to suggest that the ternary vibrant systems which they exhibit reflect the original CG or Old Irish system. It is plausible to suggest that a phonemic palatalised unlenited /R'/ may never in fact have developed in Gaelic. It is generally accepted that palatalisation developed in several stages (Greene 1973, McCone 1994: 81-6). Greene (1973: 136) notes that 'palatalization, beginning as a trickle, became a rising tide well before the Old Irish period, and the process has

continued up to modern times'. There is good evidence to suggest that certain segments were unaffected by the early stages of palatalisation, including especially 'double' consonants, and labials and velars in syllabic anlaut following broad vowels (Greene 1973: 127-8).[101] In particular double (nonlenited) *rr* (probably velarised also) was not affected by the first stage of palatalisation.[102] It is conceivable that non-lenited *rr* may subsequently have continued to resist palatalisation, either universally or in individual lexical items, and/or in certain dialects. We may compare the universal non-palatalisation of /x/, /r/ and /R/ in the clusters /xt'/, /rC'/, /RC'/ throughout the Gaelic area.[103] As an example of a lexical item which has resisted palatalisation over the centuries despite the 'rising tide' of palatalisation in Gaelic generally, we may cite ScG *tugha* 'covering' and its derivatives *tughadh* etc.[104] Contrast Irish *tuighe*, *tuí* where original /ɣ/ has been palatalised. It is worth noting that the sequence /uɣ/ resisted the first stage of palatalisation in Gaelic generally, see Greene (1973: 127-8), McCone (1994: 81). This evidence raises the possibility that *rr* may not have been palatalised in some varieties of Gaelic.

If we accept the existence of //R'// in Old Irish, the available evidence implies, as we have noted earlier, that it must have had a relatively low functional yield. As with other palatalised consonants, its occurrence was restricted to word medial and word final position. There were no phonemic palatalised consonants in word initial position in Old Irish, all phonetically palatalised segments being conditioned by a following

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[101] The first stage of palatalisation applied only to single consonants in certain environments, see (McCone 1994: 81-2). This applied also to the clusters [mb], [nd], [ng] (Greene 1973: 129; McCone 1994: 81). The hypothesis put forward in Ó Maolalaigh (1995/96: 163), namely that these clusters represent phonemic prenasalised stops with the same approximate length as single consonants, explains quite naturally the grouping of such clusters with single consonants for the first stage in the development of palatalisation.

[102] Early treatments of the development of palatalisation explained instances where palatalisation was not present synchronically in Old Irish as instances of depalatalisation. Modern scholarship prefers to explain such instances as failure to palatalise. See Greene (1973: 127-8) for discussion and further references.

[103] Greene (1973: 132) notes that 'it is likely that the cluster [xt'] in forms such as *boicht* in Modern Irish continues the original state of affairs; the spellings of *boicht* and *noicht* with suprascript or subscript *i* in the Glosses (GOI: 224) are orthographical devices to represent this anomalous sequence, since palatalization of most other clusters had been completed by the Old Irish period'. The form *boicht* also occurs in Ml. 31c1 with the ordinary grapheme *i*. If Greene is correct in positing the non-palatalisation of [x] in the cluster [xt'], then this spelling warns us against relying too heavily on orthographical representations in order to ascertain the quality of certain consonants in the Old Irish period.

[104] It is true that /u/ derives naturally from *-uighe-/-uidhe-* in some dialects e.g. GA. However, /ɯ/ is the normal reflex of *-uighe-/-uidhe-* in many ScG dialects, in which case /u/ in *tugha* could not derive from *tuighe*. Cf. *Maol-Rubha* but *Maol-Ruibhe* also, Watson (1926). The saint's name (also used as an asseveration /ma Rɯjə/ in some areas (e.g. in Eilean Ratharsair), although frequently spelled with a broad *-bh-* is always(?) realised as if it were a reflex of *-uibhe* in ScG.

front vowel //i i: e e://. It is generally assumed that all consonants were phonetically palatalised in word initial position preceding the front vowels //i i: e e://. However, given the phonetic nature of vibrants, particularly tense vibrants, whose contact with the articulators of the oral tract is considerably less than for other consonants, it is possible that word initial [R] may have resisted palatalisation, as it had done word medially during the earlier stages of the development of palatalisation. This would imply that the lowering of //e// to /a/ in the environment R __ C (never in the environment R __ C') may in fact be related to the general lowering of //e// before nonpalatals rather than been due to the depalatalisation of original //R'//. If this is correct, it implies than the incidence of palatalised //R'// may have been more restricted than previously held. The low level of incidence implied by the above hypothesis coupled with the low functional yield of //R'// may have been contributory factors for the ultimate loss of //R'// in those Gaelic dialects which possessed it.

In conclusion, we have seen that //R'// may never have been a feature of some Gaelic dialects. If correct, this would imply a CG ternary rather than quaternary vibrant system . It would follow that the ternary system which characterises many Hebridean ScG dialects and some Donegal dialects may well represent the original CG or Old Irish system. This accords well with the generally conservative nature of the phonological systems of these dialects.

(c) The reduction of the sonorant systems

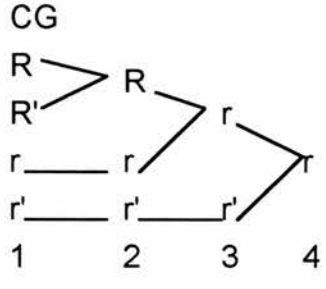
We have seen that the feature [+tense] was an important distinguishing feature of the sonorants //L N M R L' N' M' R'//. Although it is not entirely clear how this feature was realised phonetically in earlier stages of the language, it is probable that these segments were characterised by a longer duration than other consonantal segments. Long sonorants are attested in modern Gaelic dialects e.g. in Donegal and EPG for instance. There is a clear corresondence between the loss of length in sonorants and the reduction of sonorant systems on the one hand, with the development of lengthening and diphthongisation before sonorants on the other. Long sonorants and quaternary sonorant systems have been retained most in dialects which have not lengthened or diphthongised CG short vowels before originally tense sonorants. On the other hand, those dialects which have lengthened or diphthongised CG short vowels before the tense sonorants, have usually also suffered a reduction in the number of phonemic sonorants. Indeed, lengthening and diphthongisation are in such

instances normally explained as cases of compensatory lengthening, consequential to the reduction of tenseness in the 'double' sonorants.

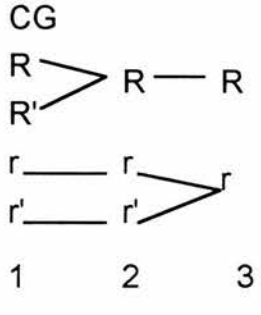
(1) Vibrants

If we accept //R'// as a CG phoneme, then the first major development in the vibrant system is //R'// > /R/, which as we have noted above, may be earlier than the twelfth century.

The next major development is the merger of /R/ and /r/ as /r/, which is attested in both Irish and some ScG dialects (Ó Murchú 1986: 22). The binary system which this merger produced is that which exists synchronically in the majority of modern Irish dialects and also in some ScG dialects, e.g. GA. The facultative use of a double tapped or trilled [r] for both original //R// and/or //r// with some Carna (Co. Galway) speakers implies that the merger of //r// and //R// is relatively recent in these dialects.[105] The merger of /r/ and /r'/ is attested is a small number of ScG dialects e.g. AP, ESG. The development of the vibrant system in Gaelic may be set out as follows:



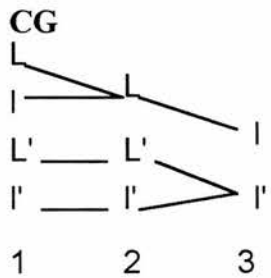
Stage 1 is not attested in any modern variety of Gaelic. Stages 2 and 3 are attested in Irish and ScG dialects. Stage 4 appears to be only attested in some peripheral ScG dialects. In Applecross, a slightly different development has occurred (AP: 30):



[105]See Ó Curnáin (1996: s.v. Historical Phonology). For double tapped or trilled [r] in Irish, see LASID I: 213 (*giorria*).

(2) Laterals

The development of ternery lateral systems is similar in Irish and ScG. A binary system has developed in southern Irish dialects:



Stages 1 and 2 are attested in Irish and ScG dialects. Stage 3 appears to be only attested in Munster Irish dialects.[106] It is noteworthy in the case of the laterals that mergers have only occurred between segments of similar quality i.e. [+palatalised] or [+velarised]. The merger of //L// and //l// is common to all ternary and binary systems in Irish and ScG.[107] There can be little doubt that stage 2 was the immediate precursor of stage 3 (in Munster dialects).

The development of a binary system in Munster dialects can be viewed as part of a general trend in these dialects towards the reduction of the palatality of segments. In the production of /l' n'/, the area of contact of the tongue at the roof of the mouth near the hard palate is considerably less in Munster dialects than for /L' N'/ in other Irish dialects. Compare IWM: 46, 48; ICF: 38, 40. We may also compare the shift reported by Ó Cuív in IWM in the early forties in the realisation of /t' d'/ from a palatalised dental [d'] to an alveolar [d̠] (IWM: 35, 36). The opposite tendency is observable in Donegal dialects where the degree of palatality appears to be increasing in the case of some segments. Quiggin notes the tendency of the younger generation to replace //n' l'// with /N' L'/ respectively. See DD: 85, 89.[108] Ó Dochartaigh (1982) deals with this intergenreational change in some detail. Sommerfelt (DT: 118-9) and Hamilton (TY: 140-5) do not report it to the same extent. Cf. Wagner (1959: 17-25). This increase in palatality can be compared to the affricitivisation of the stops //t' d'//. See discussion above.

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[106]MacAulay (1992: 227-8) notes that a binary /L/~/l'/ system occurs in some ScG dialects but provides no references.

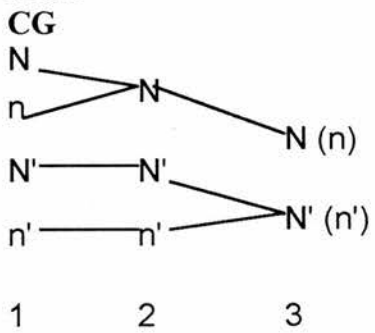
[107] I have, however, noticed a phonetic difference between intervocalic lenited and non-lenited *l* in some speakers from Eilean Ratharsair e.g. *balach* [baɻəx], *balla* [bɑLə].

[108]Quiggin (DD: 85) notes a tendency for the younger generation to 'have given up the aspiration of *L'* and in a number of words *L'* is substituted for *l*".

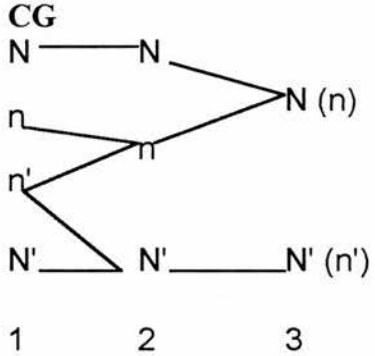
(3) Nasals

The nasal systems have developed differently in Irish and ScG dialects. Their respective developments may be set out as follows:

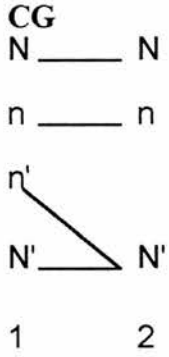
Irish:



ScG (A)



ScG (B)



Irish

In Irish, stage 1 occurs in Ulster and Connacht dialects, stage 2 in south Connacht dialects and stage 3 in Munster dialects.[109] The development of the nasal sonorant system is similar to that of the lateral system in Irish dialects. It is noteworthy once again that mergers have only occurred between segments of similar quality, i.e. between segments marked [+palatalised] or [+velarised]. The merger of //N// and //n// is common to all ternary systems.

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[109]Stage 1 occurs regularly in mid and north Connacht dialects. It does not generally occur in south Connacht dialects but has been reported for older speakers the western area of Cois Fhairrge (ICF: 118).

ScG

All stages A1-3 are synchronically attested in ScG dialects. Stage A3 is attested in some Skye dialects e.g. Kilmuir (S: 36). The major difference in development between Irish and ScG dialects is the partial merger of //n// and //n'// which is evidenced in most ScG dialects. It does not occur, however, in GA, and only marginally in GK, see development B. This connects south western ScG dialects with Irish dialects. The development //n'// > /n/ (like //R'// > /R/), involving the partial merger of segments of opposing quality, is, as we have seen, not common in Gaelic phonological terms. The development of //n'// is a desideratum for a full understanding of certain morphological developments in ScG, in particular the development of diminutives spelled variously as *-an, -ein(n), -ain(n)* (Ó Maolalaigh 1996a). A cursory survey of the distribution of the realisation of original //n'// in ScG dialects reveals some interesting general patterns. In particular, it illustrates that the phonemic split of //n'// > /n/, /N'/ occurred under a set of well-defined conditions. The development //n'// > /N'/ seems to be almost universal following back vowels except in some eastern dialects where the change appears not to occur at all. On the other hand, the same development //n'// > /N'/ following front vowels seems to be confined to western and south western dialects (but excluding Lewis dialects).[110] Similarly, the development //n'// > /n/ occurs most commonly following front vowels (GL, Ha, S, R). However, in EPG it occurs following back vowels also. The development of //n'// can be illustrated for present purposes by the following table:

[110]This distribution is supported by distributional maps based on returns for the words *mìn* and *duine* in the forthcoming *Survey of Gaelic Dialects,* see maps 3 and 4. I am grateful to Professor Cathair Ó Dochartaigh who put this material at my disposal in preparation for a conference paper on the historical development of diminutives in ScG (Ó Maolalaigh 1996a).

	GL	DOH (Ha)	DOH (Ba)	S	R	GK	GA	ESG	EPG
duine	ɯN'	ɯN'	ɯN'	ɯN'	ɯN'	un'	un'	ũn'	un
fuine	uN'	uN'	uN'	uN'	uN'	--	--	ũn'	un
móine	o:N'	ɔ:N'	ɔ:N'	ɔ:N'	ɔ:N'	ɔ:n'	ɔ:n'	n~n'[111]	ɔ:n/n'
coin	ɔ̃N'	ɔN'	ɔN'	ɔN'	ɔN'	ɔn'	ɔn'	--	ɔn',ŋ',n
càineadh	ã:N'	a:N'	a:N'	a:N'	--	--	--	ã:n'	--
ainm	[aɲ]n	[ɛ]n	ɛN'	[ɛ]n	[a]n[112]	ɛn'	an'	--	[ɛ]n
gainmheach[113]	ãn	ɛn	ɛN'	ɛn	an	øn'	--	an	ɛn
mìn	--	--	i:N'	--	--	--	--	--	i:n
sìneadh	i:n	i:n	i:N'	--	i:n[114]	--	i:n'	ĩ:n[115]	i:n
min	--	in	iN'	--	--	in'	in'	ĩn	in
minig	in	--	--	--	--	--	--	--	--
sin	in	ɛn	iN'	in	in	in', iŋ'	iN (sic)	ən	ɛ,e,in
teine	ãn	ɛn	iN'	in	in	en'	en'	in	en
léine	e:n	e:n	e:N'	e:n	e:n	--	--	e:n	e:n
fhéin	e:n	ɛ:n	e:N'	e:n	e:n	e:n'	e:N (sic)	ẽ:n	ɛ:/e:n

Table 1F.1: Development of //n'// following front and back vowels

The retention of the feature [+palatalised] is illustrated in the following table, where + indicates that (phonemic) palatality has been retained, – that it has been lost:

	GL	DOH (Ha)	DOH (Ba)	S	R	GK	GA	ESG	EPG
//u//_	+	+	+	+	+	+	+	+	–
//o://_	+	+	+	+	+	+	+	(+)	(+)
//o//_	+	+	+	+	+	+	+	?	(+)
//a://_	+	+	+	+	?	?	?	+	?
//a//_	–	–	+	–	–	+	+	–	–
//i://_	?	–	+	?	–	?	+	–	–
//ɨ//_	–	–	+	–	–	+	(–)?	–	–
//e://_	–	–	+	–	–	+	?	–	–
//e//_	–	–	+	–	–	+	+	–	–

Table 1F.2

Table 1F.2 shows that for the development //n'// > /N'/, there is an isogloss separating northern and eastern dialects (GL, Ha, S, R, ESG, EPG) from south western dialects (Ba, GK, GA), in which case the development is more common in south western dialects.

[111]Dorian notes that /n'/ occurs in southern varieties but /n/ in northern varieties in the word *mòine* (ESG: 144).

[112]So Aultb., but [ɛN'] RP (DOH: 96).

[113]Also *gainmheach*.

[114]Borgstrøm (SR: 148, n. 1) notes that 'the exact phonetic and phonological value of this word (*shìn, sìneadh*) is not clear to me'.

[115]'begin' (vb) (ESG: 73).

Palatalised segments occur for original //n'// following the back vowels /u/, /ɯ/, /ɔ:/, (/o:/) and /a:/ in all dialects except EPG where /n/ appears to be the norm following /u/. The occurrence of palatalised segments for original //n'// following front vowels varies to some extent and seems in particular instances to depend on the quality of the front vowel involved. In DOH, the [+palatalised] feature is retained following /i(:) a:/ but not /ɛ/. However, in south western dialects (e.g. GA, GK), the [+palatalised] feature is retained following /i(:) e ɛ a:/. On the other hand the [+palatalised] feature is not retained following front vowels in eastern dialects (ESG, EPG). Leaving aside for the moment the case of *càineadh* (where //n'// > /N'/, /n'/), it is clear that if the [+palatalised] feature of //n'// is retained following front vowels, then it is most likely to be retained when the front vowel is a high vowel. Similarly, it follows that if the [+palatalised] feature is retained following back vowels, then it is most likely to be retained following /u/.[116]

There is clearly an implicational relationship between the front vowels and non-front vowels in ScG with respect to the retention of palatality of reflexes of //n'//. This may be expressed as follows:

//n'// → /N'/ (n') / __ //i(:) e(:)// ⇒ //a: o(:) u// (A)

In other words if //n'// becomes /N'/ (or /n'/) before the front vowels //i(:) e(:)//, then this also happens before the vowels //a: o(:) u//. There is one apparent anomaly, namely that long //a:// appears to pattern with the labialised vowels //o(:) u// but short //a// patterns with the front vowels //i(:) e(:)//. As a corollary, to the implicational relationship just stated, it follows that the most favourable environments for the merger of //n'// and //n// are when //n'// is preceded by the non-back vowels //i(:) e(:) a//. This may be stated as follows:

//n'// → /n/ / V[–back] __ V≠ //a://
//n'// → /N'/, /n'/ / V[+back]

Implicational relation (A) enables us to formulate a general statement with regard to the historical development of //n'// in ScG. For the majority of ScG dialects, the neutralisation or merger of //n'// and //n// is most likely to have taken place in the first instance following the front vowels //i(:) e(:)// and //a//. In south western dialects

[116]Note, however, that our limited sample implies that the feature [+palatalised] is retained following /ɔ:/ but not /u/ in EPG.

(GA, GK), the merger seems not to have taken place. In eastern dialects, on the other hand, the merger of //n'// and //n// seems to be almost universal.[117]

We have noted the apparent anomaly in the development of //n'// following //a// and //a:// illustrated by *ainm, gainmheach* and *càineadh* respectively. Leaving aside dialects for which the change //n'// > /N'/, /n'/ is universal, we see in other dialects that //n'// merges with /n/ following short /a/ but with /N'/, /n'/ following long /a:/.

//n'// → /n/	/ V[–back] __	V≠ //a://
//n'// → /N'/, /n'/	/ V[+back], //a:// __	

This suggests that long //a:// patterns with the back vowels and that short /a/ patterns with the front vowels. This suggests that in ScG before the merger of //n'// and //n// began to take place, short and long /a/ were not of the same quality. In particular, it suggests at the time of merger that short //a// was realised more to the front of the mouth than long //a://. If we assume that short and long //a(:)// had in Common Gaelic roughly the same place of articulation, then the ScG evidence presented here supports the claim made in the introduction to this thesis that short vowels are more liable to change their quality than long vowels.

It would be unwise perhaps to lend too much weight to the evidence of a single lexical item, in this case *càineadh*. However, the occurrence of /N'/ in *càineadh* in dialects where the development //n'// > /N'/ is generally only attested following back vowels, may be due to other factors which we may or may not ever discover, including analogy. For instance, a more detailed study of the merger of //n'// and //n// in ScG may show that the length of the preceding vowel was a significant factor. There is some evidence to suggest that there may have been a tendency to merge lenited with unlenited sonorants following long vowels in earlier stages of the language. At least, this is one interpretation of the riming rule in Classical Irish poetry which allows lenited sonorants to rime with unlenited sonorants following long vowels. See Knott (1957: 5) who notes: 'when consonants of the *ll* class are in intervocalic position, or preceded by a long vowel, they may rank with the *bh* class'. This rule is based on examples from examples of *dán díreach*. However, the *Irish Grammatical Tracts*,

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[117]It is interesting to note that there are no clear instances of the development //n// > /N'/ in ScG. This has clear implications for the origin of the diminutives *-an, ein(n), -ain(n)* in ScG (Ó Maolalaigh 1996a).

Bergin (1916: §13, §59), seem only to refer to the riming of the unlenited consonants *m, ng* with the lenited consonants *n, l* following long vowels. Cf. Bergin (1915: §60). But the *Rudimenta Grammatica Hibernicae* extends this rule to include all *connsuine theanna rr, ll, nn, m, ng*. See Mac Aogáin (1968: 83, §IV).[118]

Our discussion of the development of //n'// in ScG highlights the fact that sound change in Gaelic tends on the whole to be phonologically conditioned, see chapter 8. A more detailed study of the development of the sonorant systems generally, which is not possible here, may show that other mergers within the sonorant system may also have been conditioned.

(d) the loss of palatalised labials in ScG

It is generally assumed that phonemic labials developed in all varieties of Gaelic. It is tempting, given the generally conservative nature of ScG phonology, to suggest that palatalised labials may not have developed in ScG. There is some evidence to suggest that labials may not have been phonemically palatalised in some varieties of ScG as early as the twelfth century. The various spellings of the name *Colum*, varying between *-uim* and *-um,* in the Gaelic notes in the *Book of Deer* can be interpreted as hypercorrections, suggesting that phonemic palatalised labials may not have existed in some eastern ScG dialects in the twelfth century.[119] The forms which occur are as follows; the four scribes are represented by the letters A-D:

A: *Mal-Colum* (II, 8), *Mal-Coloum* (II, 9), *Mal-Colum* (II, 11)
B: *do Choluim Cille* (V, 2, 7), *Mal-Coluim* (V, 4)
C: *ria Colum Cilli*
D: *Gille-Colaim* (III, 10), *mac Mal-Colaim* (III, 10), *do Colim Cilli* (IV, 2)

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[118]Ó Baoill (1988: 132) suggests that *sgrinn* (x2) from a late 15th century Gaelic manuscript is evidence for the lengthening of /i/ before *nn*, cf. *scrín* (recte) in the same source. However, the spelling *sgrinn* is also suggestive of the development //n'// > /N'/ following front vowels.

[119]Jackson (1972: 132-3) alludes to the possibility of 'scribal uncertainty arising from the . . . weakening in the palatalisation of labials' but quite correctly adds that little weight can be laid on this. He also offers a different explanation for the variants of *Colum* in the notes. He suggests that some of the forms are either slips on the part of the scribes or uses of nominative for genitive (1972: 145). Jackson (ibid) refers to the possible early break down of the case system in Eastern Scotland as witnessed in the 14th century place-name spelling *Lurgyndaspok* claiming that it derives from *Lorg in t-Easbag* (N sg for G sg), but see now Ó Maolalaigh (1997).

It is noteworthy that each scribe appears to be individually consistent in his spelling of the name *Colum*. Each uses only one form (allowing for *u~ou* and *ai~i* variation) even when the name occurs in different cases. Scribes B and D, for instance, use the *i* grapheme in dative and genitive forms. Jackson, in his discussion of the Gaelic notes, refers only to the dative forms in a passing footnote suggesting that forms with final *-im* may imply that the name *Colum* is being treated as a feminine noun (Jackson 1972: 132, n. 2). There are instances of this use in Irish sources, see DIL, s.v. *colum*. This does not explain the forms written by scribe A. It must remain a possibility that the internal consistency of each scribe's spelling of the name *Colum* in various case forms may reflect the non-phonemic status of palatal labials in their respective dialects. This provides us with a tentative *terminus ante quem* for the non-phonemic status of palatal labials in ScG. If correct, it would imply either the early reduction of the [+/–palatalised] opposition in the labials in ScG or conceivably the continuation of an inherited ScG system which did not contain phonemic palatalised labials. This potentially early date for the non-existence of palatalised labials in ScG begs the question: did phonemic palatalised labials ever develop in earlier varieties of ScG? We offer a possible alternative explanation of the non-existence of palatalised labials in ScG in what follows.

If this is accepted, however, it is difficult though not impossible, as suggested by Jackson (1967), to reconcile this view with the synchronic vocalism in words like *luibh* /Luj/, *druim* /druim/, *cnuimh* /krũj/, *làimh* /Laĩv/, *daimh* /dẽv/ (DOH: 216) where a palatal segment is required following the stressed vowel as a precursor in order to explain the synchronic vocalism. This is essentially the stance adopted by Borgstrøm (DOH: 215) and Jackson (1967). Borgstrøm (DOH: 216) explains the loss of palatalisation of the labials as being due mainly to a process of 'differentiation' whereby the palatal element is 'differentiated into a separate phoneme between the original vowel and the labial; the result is an *i*-diphthong or *j, ç* '. Alternatively the palatality may have been transferred to the preceding vowel or simply lost without leaving any trace. Jackson (1967: 190, 192) explains the ScG development as being due to a process of 'depalatalisation', thus appealing to a process which is allegedly attested from 'as early as O. Ir.'. Jackson (1967: 192) suggests that depalatalisation 'is perfectly natural' in the case of the labials 'since palatalisation has a relatively weak hold on the labial consonants'. Sommerfelt (1937: 278) also suggests that the articulation of labials lends itself less readily than other consonants to the effects of palatalisation. The only evidence which Jackson adduces in support of this claim is the alleged depalatalisation of labials in Primitive Irish. Sommerfelt's (1937: 278)

argument, however, has a phonetic articulatory basis. We have already referred to the concept of depalatalisation in Old Irish and have concluded that it is an invalid concept. Apparent cases of depalatalisation, e.g. *lámae* (G, sg) < **lámjás*, rather than reflecting the loss of palatalisation, more likely represent instances where palatalisation has been blocked or has failed to operate. Doublets of the kind *lámae*, *láime* (G, sg) are thus better explained as dialectal variants, the latter arising in dialects where the process of palatalisation was more progressive.[120]

Any discussion of the historical development of the labials in ScG should take a polysystemic rather than a monosystemic approach to the matter, see Lass (1984: 164). A thorough investigation of the matter would need to distinguish between labials in the following positions, both stressed and unstressed: word initially, word internally and word finally. Most scholars would agree that labials were phonemically palatalised in the same way, and at the same time as other consonants. See for example *gaibid* < *[gav'iθ'i] (McCone 1994: 81), *taibred* < *[tav'ïr'eθ] (McCone 1994: 82). It is unlikely, however, that phonemic palatalised labials ever existed in initial position in ScG. Borgstrøm (DOH: 215-6), Sommerfelt (1957: 368) and Jackson (1967: 190) all assume that initial palatalised labials existed in an earlier stage of ScG.[121] Jackson (1967: 190) uses phonemic symbols and solidi to transcribe the initial elements in Primitive Irish *beó*, *fiú*, *becht*, thus leaving us in no doubt that he considered palatalised labials as being phonemic in initial position. However, this is impossible for the Primitive Irish period since phonetically palatalised consonants generally can only have been phonemicised in initial position once the following developments had occurred: //eo:// > /(j)o:/, //iu:// > /(j)u:/, //e// > /(j)a/, //u// > /(w)i/, //i// > /(j)u/, see McCone (1994: 86; 1996: 140-1). These changes, unlike in Irish, are not universal in ScG. In such cases, where the above sound shifts ('breakings') have taken place in ScG, it is by no means clear whether or not the resultant clusters [bj], [pj], [mj], [vj] are original or represent developments from unitary palatalised labials. Given the non-universal nature of the above vowel changes in ScG dialects, it is more likely that the initial clusters [bj], [pj], [mj], [vj] are original rather than developments from /b' p' m' v'/ respectively.[122] The less progressive nature of palatalisation in ScG as opposed to Irish can be seen in the realisation of the initial clusters /gl' gr' sg' sd'/

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[120]Compare Irish *tuighe* with ScG *tugha*, both deriving from **tuge*. The ScG form is more conservative than its Irish counterpart and represents a less progressive dialect type in the matter of palatalisation.

[121]It is implicit in Borgstrøm (DOH: 215-6). Sommerfelt (1957: 368) is the least convincing and it is unclear if he refers to phonetic or phonemic palatalised labials here.

[122]Jackson (1967: 190) refers to this possibility but dismisses it.

where palatalisation has not yet affected the initial segment.[123] This leaves us with word internal and word final position to consider.

Slender labials in final position

In Old Irish orthography where a stressed syllable[124] ends in a palatal consonant (or group of consonants) the grapheme *i* is consistently written after all monophthongal back vowels and back-gliding diphthongs, e.g. *maith, clainde, láim, béoil.* Thurneysen (GOI: 55-6) adds that the grapheme *i* represented an on-glide which 'must have been quite audible, since it is rarely omitted in writing'. McCone (1996: 33) notes: 'Presumably the practice of writing a palatal on-glide arose before (*recte* following) a back vowel first because it was more audible in that environment.'[125] Whether or not Thurneysen's phonetic interpretation of the *i* grapheme as an on-glide is correct,[126] it has generally been assumed that the grapheme *i* when it occurs preceding labial segments, implies, as in other positions, that the following labial segment is palatalised. This is certainly the view adopted by Jackson (1967: 192). Sommerfelt (1937: 278) is the only scholar to have questioned this interpretation of the *i* grapheme occurring before labials in Old Irish orthography:

> On ne saurait tirer argument de l'orthographe (la qualité <<palatal>> des labiales est souvent désignée par un *i* préposé à la consonne comme dans le cas des dentales) pour supposer que l'état de Munster [i.e. labiales palatales] s'était déjà établi dans la période du vieil-irlandais.

Rather than representing a palatalised labial, Sommerfelt argues that the *i* which occurs before 'slender' labials is based by analogy on its use before other non-labial segments. He argues for Old Irish, and for ScG and Ulster Irish dialects that the 'slender' labials are the neutral unmarked set whereas the 'broad' labials, being velarised, were the marked set. However attractive this may seem from a general historical perspective, Sommerfelt's claim is ultimately unprovable. Whatever the *i* grapheme was intended to signify, it is indisputable that ViC[+lab] sequences differed, phonetically at least, from VC[+lab] clusters.

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[123]The ScG initial clusters /Cr', l'/, /sC'/ can hardly have developed from /C'r', l'/, /s'C'/ respectively.
[124]Thurneysen argues that 'a single consonant on the border between two syllables belonged to the **second**'. See GOI: 56, 99-100.
[125]The fact that *i* is generally not written following the front vowel //e// in Old Irish sources is in keeping with Thurneysen's interpretation since *i* on-glides would have been almost imperceptible following //e//. Cf. McCone (1996: 33).
[126]Thurneysen (GOI: 56-7) is not prepared to accept that the *i* grapheme in monosyllabic words at least merely indicated that the following consonant was palatal.

We have referred to Sommerfelt's phonetic, and Jackson's philological view, that labials are less susceptible to palatalisation than other consonants. The general lack of phonetic palatalisation of labials in ScG and northern Irish dialects may corroborate this view.[127] However, it is significant that this conclusion is not reached by Bhat (1978: 68-70) in his general study of palatalisation. Bhat does, however, note in the case of some languages which are reported to contain palatalised labials that

> it is not clear . . . whether the resultant labial sound has a secondary palatal articulation added to it, or whether it has merely a palatal off-glide or on-glide attached to it (Bhat 1978: 69).

Bhat's statement seems to imply some difficulty in the interpretation of 'palatalised' labials in some cases at least. To use terms used earlier in this chapter, there would appear to be uncertainty in some cases with regard to the interpretation of the palatality of labials as internal or external palatalisation.

Our hypothesis is that the 'palatalisation' of labials in earlier stages of ScG (and perhaps by implication also in some varieties of Irish) may have been realised externally rather than internally. This can be illustrated with the word *luibh* 'herb, weed' which Jackson (1967: 192) derives from **lubi*. Leaving aside the fact that this is one of the words where palatalisation would have been blocked by the first palatalisation,[128] it is clear, judging from the synchronic form of the word in ScG dialects that the *i* of the second syllable did eventually affect the subsequent development of the stressed vowel. Whether we can infer that the *-i-* necessarily resulted in the internal palatalisation of the labial remains questionable. Jackson (1967: 192) argues that the labial was palatalised as follows: [luvis] > [luv'is] > [luv']. Our suggestion is rather that the palatalisation may have been marked by a preconsonantal external glide [j]. This would give the following development: [luvis] > [lujvis] > [lujv(')]. With the loss of final syllables, the glide rather than the labial element could have attained phonemic status.[129] Phonetic [lujv] would in such a scenario represent phonemic /lujv/. The presence of a phonemic /j/ before labials in stressed codae

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[127]Wagner (LASID I: xxiv, n. 1) notes that it is difficult to distinguish between [f] and [f'] in some Irish dialects.

[128]Since it contains stressed //u// followed by a labial segment, see Greene (1973: 127-8), McCone (1994: 81).

[129]It is possible, though it will not be pursued any further here, that this segmentation may have affected other consonants also. In such cases the later development of unitary internally palatalised phonemes from externally palatalised clusters would be natural in phonetic terms. In particular it is conceivable that the Irish phonemic palatalised labials /b' p' m' v'/ may have developed from externally palatalised clusters [bj (or jb), pj (or jp), mj (or jm), vj (or jv)]. For the suggestion that [b'] may have developed from [bj] in initial position, see Jackson (1967: 190).

concurs with Thurneysen's phonetic view of the *i* grapheme representing clearly audible *i* glides occurring before 'palatal' consonants. It should be noted that this hypothesis explains satisfactorily the synchronic vocalism in ScG *luibh* /Luj/, *druim* /druim/, *cnuimh* /krũj/, *làimh* /Laĩv/, *daimh* /dɛ̃v/ (DOH: 216). The loss of the labial frivative in clusters /jv/ is not unnatural in Gaelic phonological terms.[130] The fact that the labial fricative is most frequently lost following syllables containing /u/ might argue in favour of the neutral quality of the labial fricative /v/, the loss of the fricative being explained as a case of dissimilation.[131] Vowel lengthening before word final (long) sonorants could conceivably result in the development /uj/ > /ui/ e.g *druim, luim*. The raising and fronting of //a// to /ɛ/ before palatals generally is well attested in ScG.

Bhat (1978) in his study of palatalisation, based on c. 120 languages, provides the following conclusions on the effects of palatalisation on consonants:

> There are evidently two different ways in which palatalization could affect a consonant: 1) it could modify the primary articulation itself, or 2) it could add a secondary palatal articulation to the consonant, leaving the main articulation unaltered. Changes that produce the effects of the latter type are comparatively less frequent and are also probably areally restricted . . . . However, when they do take place, they appear to affect *almost all* [italics mine] the consonants occurring in the language, thereby creating a two-fold distinction (variously designated as palatalized – non-palatalized, sharp – plain, or soft – plain, or soft – hard) in all its consonants. Changes that induce the effects of the former type, on the other hand, are generally less systematic in nature, and depending upon the underlying tendencies involved (fronting, raising or spirantization), they affect only a limited portion of the consonantal system. It is possible, however, for the effects of both these types to occur together in a language, as for example, the former with one set of consonants such as labials, and the latter with another set such as velars or apicals. (Bhat 1978: 67)

Gaelic clearly belongs to type (2), as in most cases the main articulation is unaltered and the palatalisation is a secondary articulation. It is interesting to note that palatalisation of this type does not necessarily affect *all* consonants in a particular language. Bhat's conclusions are important also in that they claim that palatalisation

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[130]The reduction of clusters containing fricatives is well attested in Gaelic. The modern Munster reflex of *adhbhar* /au/ may imply the reduction of the cluster //ðv// to //v// in an earlier stage of the language. Similarly reflexes of *saidhbhir* as /sev'ir'/ in certain Irish dialects (ICF: 88) implies the reduction of //ð'v'// to //v'//. Similarly *fienasi* for *fiadnaise* (V, 3), *blienec* for *bliadnach* (I, 15) in the twelfth century Gaelic notes in the Book of Deer implies the loss of //ð// in the cluster //ðn//. It probably indicates the assimilation of //ð// and //n// to /N/ as Jackson (1972: 139) points out. It is true that the examples just quoted imply the retention rather than the loss of the labial fricative. However, the developments *tógbháil* > *tógáil*, *fuighbhe* > *fuighe* provide examples of the loss of labial segments in clusters. For the latter example, see McManus (1994: 342).

[131]It should be said, however, that the development /v'/ > /j/ is perfectly acceptable in phonetic terms. Indeed Bhat (1978: 68) refers to this development in languages other than Gaelic.

may in some languages affect different consonants in different ways. Bhat also notes that there is a 'continuum of simultaneity' connecting both types of palatalisation. He notes that:

> the palatal articulation may form an on-glide to the consonant under consideration, or a simultaneous secondary articulation, or an off-glide — it could fall anywhere between these three, or form combinations of two or all three of them. (Bhat 1978: 68)[132]

Bhat's comments on the various palatal articulations accords well with our view of internal and external palatalisation. It follows that our interpretation of the different development of the labials in ScG, both in phonetic and in phonological terms, is to some extent supported by general linguistic evidence.
Jackson (1967: 192) claims that the [i] in ScG [Lui] *luibh* 'is quite inexplicable unless having arisen from the on-glide to a *palatalised* labial (which was itself later depalatalised)' [italics mine]. The hypothesis presented here differs from Jackson (1967: 192) in that it suggests the phonemicisation of a palatal /j/ before neutral labials which does provide a plausible alternative explanation of the facts, both diachronic and synchronic.

Our hypothesis may be extended to include word internal labial segments also. This may be illustrated with the word *caime* (G, sg, f of *cam* or comparative of *cam*). *Caime* derives from *[kamiya]. The traditional view of the development in this case would be as follows: *[kamiya] > *[kam'iya] > *[kam'eya] > [kam'e] = /kam'e/.[133] The hypothesis presented above would argue for one of the following developments:

*[kamiya] > *[kajmeya] > *[kajme]

The development of a phonemic palatal /j/ would necessarily imply the non-phonemic status of labials, since even if palatalised labials existed phonetically, their occurrence would be predictable. This hypothesis explains satisfactorily the vocalism found in Modern ScG in words of the type: *caime* /kɛmə/, *caibe* /kɛb/. In instances where these latter words are realised as /kamə/ and /kab(ə)/ respectively, we have presumably to deal with the loss of pre- or post-consonantal /j/ without vowel affection. Indeed this may have been the general development of intervocalic jC[+lab] clusters which did not occur at a morpheme boundary. If so, the vocalism of bi-

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[132]Bhat also notes that the relative strength of the main and secondary articulations may vary, one being stronger or weaker than the other (Bhat 1978: 68).
[133]Similarly for the abstract noun *caimmi*, although this would derive from *[kamih]. Cf. McCone (1994: 124).

morphemic disyllabic *làimhe* /Lãivə/ could be explained as analogical forms based on the paradigmatic alternations in mono-morphemic monosyllabic forms such as /a:/ *làmh* ~ /ai/ *làimh*, /a:/ *sàbh* ~ /ɛ:/ *sàibh*, /a/ *damh* ~ /ɛ/ *daimh* etc. The morphophonemic alternation /a/ ~ /ɛ/, is well established generally in ScG. See DOH: 177.

The hypothesis presented above suggests an alternative derivation for the labial consonants in ScG which does not depend on the existence of palatalised phonemic labials in an earlier stage of ScG. This would imply that the synchronic labial system in ScG, rather than representing a restructuring of a presumed earlier system with phonemic palatalised labials, reflects an even earlier system in which phonemic palatalised labials had not developed. The phonological conservativeness which this implies accords well with the conservative nature of ScG phonology in general. If the present hypothesis is accepted, it provides another striking example of the early divergence of Irish and ScG. In particular, it warns us against the dangers of assuming an identical CG phonological system for all varieties of Gaelic. It illustrates the importance of considering the evidence of ScG phonology on its own terms and on an equal footing with the evidence of Irish phonology in interpreting the historical development of Gaelic. It has too often been assumed that developments which occurred in Irish must also have occurred in ScG. This assumption, in some cases, has led scholars to explain certain ScG forms, which can be deduced from earlier stages of the language, as developing along similar lines as Irish, and subsequently developing back to their former state in ScG. Such arguments, though not impossible in linguistic terms, are circular and uneconomical. They do not on the whole give due recognition to the evidence of ScG phonology. I have attempted to illustrate this elsewhere in the case of the development of eclipsis, see Ó Maolalaigh (1995/96). I believe that the development of final unstressed *-aich* in ScG provides yet another illustrative example where continuity rather than innovation more plausibly explains the modern ScG forms.[134] The development of the labial system may well provide another.

[134]I hope to deal with the development of *-aich* elsewhere.

(e) The loss of nasalised labial fricatives //ṽ//, //ṽ'//

We have noted above that phonemic nasalised labial fricatives are generally held to have existed in earlier stages of the language although their existence synchronically in modern dialects is marginal. Phonemic nasalisation of labial fricatives has been lost as a result of the reassignment of nasality (a) to an adjacent vowel, and (b) to the suprasegmental level.

(f) Changes in the opposition C ~ C'

We have noted the crucial opposition in the CG consonant system between nonpalatal and palatal consonants. Given the widespread distribution of the feature of [+/– palatalised] and the manner in which palatalisation developed, it is reasonable to assume that [+/–palatalised] was the original differentiating feature in the majority of C~C' oppositions, leaving aside the tense sonorants, the broad series of which may have been velarised. In some instances, particularly in Irish, especially Munster dialects, the opposition has shifted from [+/– palatalised] to [+/–velarised]. This would imply that southern Irish dialects have innovated and have shifted towards a consonant system which favours oppositions based on the feature [+/– velarised] rather than [+/–palatalised]. On the other hand, Connacht and Donegal dialects are generally more conservative and retain neutral /t d s/. There is some evidence for the loss of the feature [+velarised] in the segments /r N/ in some Connacht dialects, perhaps due to the merger between //N// ~ //n// and //R// ~ //r// in favour of the features of the lenited segments, although this is not supported by the fact that /n/ but not /N/ is velarised in some Connacht dialects (IT, IE). When compared with Connacht and Donegal dialects and the assumed historical situation, the Munster system clearly reflects an innovation whereby the feature of velarisation has spread to the segments /t d s/.

(g) Reduction of NC[+voice] clusters

The developent of NC[+voice] clusters has been different in Irish and ScG, although there are some shared developments. In both Irish and ScG, *nd* and *mb* (and perhaps also *ng*) clusters are reduced to *nn* and *m* in mono-morphemic forms. However, the development of these sequences has been different in bimorphemic forms: In Irish NC[+voice] clusters are reduced to nasal segments, as in mono-morphemic forms; in ScG, however, NC[+voice] clusters are retained where these clusters appear at the

word boundary of two morphemes.[135] Compare the following Old Irish, Irish and ScG forms:

	Old Irish	**Irish**	**ScG**
(a)	*find*	*fionn*	*fionn*
	sluind	*sluinn*	*sluinn*
	ainder	*ainnir*	*ainnir*
(b)	*gránda*	*gránna*	*gràndа, grànna*
	díombuidheach	*diomúch*	*diombach*
	díombuan	*díomuan*	*diombuan*
	dimbail	*diomailt*	*diombuil*
	indiu	*inniu*	*an-diugh*
	indé	*inné*	*an-dé*[136]

The reduction of *ng* clusters to [ŋ] resulted in the phonemicisation of the /ŋ/ phoneme in certain Irish and ScG dialects. For the different treatment of NC[+voice] clusters word initially in earlier stages of Irish and ScG, see Ó Maolalaigh (1995/96) for details.

[135]The reduction to nasal segments in ScG in words like *ainneoin* < *aindeóin*, *a-màireach* < *im+bárach* could be due to the loss of a perceived morpheme boundary by the time of the reduction of the clusters.

[136]We may also compare *daondan* (normally *daonnan* in ScG) attested in Red Point, Ross-shire (R: 95) which incidentally supports O'Rahilly's (1926: 30-1) derivation from *d'oén + dán*.

Chapter 2

The Synchronic Vowel Phonology of Irish and ScG

Synchronic

Before we discuss the historical development of the CG protosystem, it will be necessary to describe in some detail the synchronic vowel phonology of Irish and ScG dialects which poses many problems for the comparative and historical linguist. First, there is the problem of symbolisation which varies widely throughout the monograph descriptions. A certain amount of symbol standardisation is required for a diachronic study of the present kind. Such standardisation has, however, been kept to a minimum in order to facilitate comparison with the original sources. Second, the phonetic data has been subject to conflicting phonemic interpretations. It will therefore be necessary to discuss these apparently contradictory interpretations and, where possible, to reconcile them. This chapter will conclude with a list of the phonemic symbols utilised in the present study to describe Irish and ScG dialects.

Our discussion of the phonemic systems which have been put forward for the modern dialects and the problems of analysis which they pose will enable us to choose relatively uniform phonemic systems for the main Gaelic dialect areas. We will see that the phonemic analysis of vowel systems in ScG poses few problems and is remarkably stable throughout the ScG speaking area. On the other hand, we will see that two quite different phonemic systems are required to represent accurately the inventories of Irish dialects. Despite conflicting analyses of individual Munster and Connacht Irish dialects, we will illustrate how these dialects may be adequately and plausibly represented by the same phonemic system. We will also see that a system, intermediate between the ScG system and the Munster/Connacht system, is required to adequately represent Donegal dialects.

The phonemic analysis of the vowel systems of Gaelic is problematical in some respects. The main problems of phonemic analysis stem from the following facts: (a) the functional load of some oppositions are quite low, (b) minimal and near minimal pairs are often hard to come by, (c) the distribution of so-called contrastive phonemes is almost complementary. In the case of Irish, the problematical contrasts in question relate to front (traditionally 'slender') and back (traditionally 'broad') vowel oppositions, where in many cases, no convincing miminal pairs can be shown to exist

and front and back phones for a given vowel height are in near-complementary distribution. This complementary nature of such distributions can largely be accounted for in that historically 'slender' and 'broad' vowels occurred in complementary distribution, 'slender' vowels occurring following palatalised ('slender') consonants and 'broad' vowels occurring following neutral or velarised ('broad') consonants.

The major differences between Irish and ScG vowel systems lie in the additional contrasts between high- and low-mid vowels at the front and back positions in ScG and the further contrast between back rounded and unrounded vowels. Although the phonemic interpretations of ScG vowel systems has not generally been subject to the same scrutiny or reassessment as their Irish counterparts, the mid and high back oppositions in ScG provide suitable analogies to the front-back oppositions in Irish dialects. In ScG, the contrastive function of the mid and high back contrasts is usually quite low and their distribution can be shown to be almost complementary. This chapter focuses, in particular, on these questionable contrasts with a view to establishing the most suitable synchronic description for Irish and ScG vowel systems.

Section A
The Synchronic Vowel Phonology of Irish

General descriptive accounts of Irish dialects tend to describe their vowels sytems in terms of a typical triangular quinary arrangement (Ó Dochartaigh 1992: 86-7;[1] MacEoin (1993), Hughes (1994: 625-28), Ó hUiginn (1994: 547-48), Ua Súilleabháin (1994: 482-85). There is much diversity, however, in the number of vowel phonemes which have been reported in more detailed phonetic–phonological studies of particular dialects. For the short vowels, systems involving three, four, five and six vowels have been put forward. In the case of the long vowels, systems containing five, six and eight vowels have been described, noticeably with the higher numbers invariably describing Donegal dialects, see Ó Baoill (1996, 1996a). Relating the number of short vowels to the number of long vowels in particular instances, the seven vowel systems which have been reported for Irish dialects so far may be described as follows (where the first number refers to the number of short vowels and the second to the number of long vowels):

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[1]Ó Dochartaigh (ibid) does, however, note that this 'represents a pandialectal system, not all of whose contrasts are necessarily to be found in any particular dialect . . . and some dialects appear to show some additional contrasts'.

A **3:5** (Skerrett 1967, Bliss 1972, Ó Siadhail 1989),
B **4:6** (Williams 1976),
C **4:5** (Holmer 1962, Hickey 1986),
D **5:5** (IR, IT, IE, Ó Dochartaigh 1972, Ó Sé 1982),
E **6:6** (IWM),
F **6:7** (ICF),
G **6:8** (Sommerfelt 1965).

This may be represented in graph form as follows:

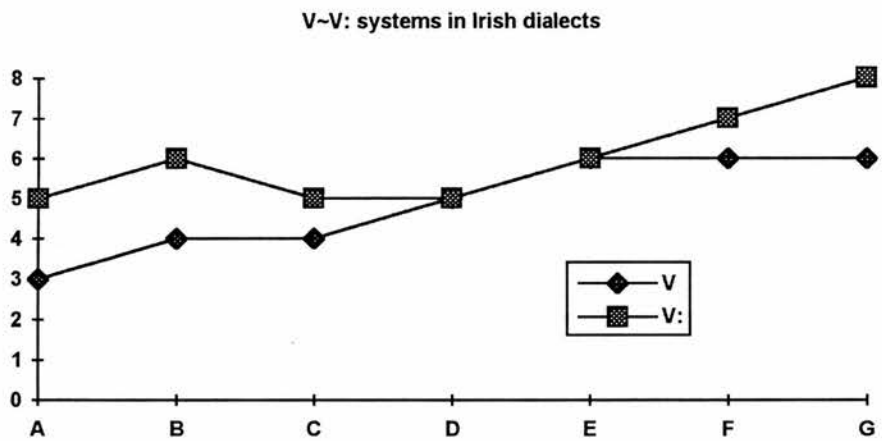

Chart 2A.1

We note that in all descriptions the number of short vowels is always less than or equal to the number of long vowels.[2] Of the seven types reported, only two show symmetry in the number of short and long vowel phonemes. This situation is in keeping with Crother's (1978: 123) overall conclusions on the typology and universals of vowel systems although he notes that symmetry is more common than non-symmetry:

> Nearly half (45%) of the sample languages have contrasting long and short vowels. In most cases (70%) the vowels of the two systems are equal in number and arrangement, either identical in quality or showing minor differences. In another 19% the long vowel system is larger than the short vowel system, while 8% have more short than long vowels.

[2]Ó Baoill (1996), however, implies that in some Donegal dialects there may be as many as eleven short and ten long vowel phonemes.

Short vowels

There have been 4 short vowel systems put forward for Irish dialects, 3V, 4V, 5V, 6V.

3V system

/i/
/e/
/a/

Skerret (1967) and Bliss (1972) both posit a 3V linear system for the short vowels distinguished only by the features of height high-mid-low with no front-back distinctions. Skerrett (1967) which describes the dialect of the Inishkea Islanders, then settled in Erris, Co. Mayo, provides no evidence, phonetic or otherwise, for a linear 3V interpretation. Bliss on the other hand, who seems to refer only to the Irish of Tourmakeady, does offer a partial explanation for his adopting a 3V system. He notes that 'if the criterion adopted is the number of short vowel symbols necessary for the unambiguous transcription of any utterance, it can be argued that three are sufficient' (Bliss 1972: 64-5). However, the criterion of 'unambigous transcription' as described by Bliss is unsatisfactory from the point of view of phonemic analysis. We will see later that it glosses over fundamental phonetic differences between front and back phones in the case of high and mid vowels. To be fair, Bliss does note de Búrca's (IT) failure to provide minimal pairs for the contrasts /i/~/u/ and /e/~/o/. Ó Siadhail (1989: 35) notes that a linear trinal vowel system is possible for all Irish dialects 'at a more abstract level'. We will see below that such a system is in fact not possible for certain Donegal dialects.

From a typological and universal perspective, 3V linear systems are not common although they have been reported for a number of Caucasian languages (Crothers 1978: 138; Lass 1984: 140). Crothers (1978: 104, 150) notes 3V systems for 23 languages out of a sample of 209 languages i.e. for 11%. Crothers (1978: 102) adds that where such systems exist, they 'are subject to a variety of problems of interpretation'. He also notes that 'the vowels of three vowel systems often show considerable subphonemic variation' (Crothers 1978: 109). We will see below that Crother's observations hold true for Irish dialects also.

4V system

The three accounts which advocate a 4V short vowel system for Irish dialects may be reduced to the following two types:

(A)			/i/		(B)		/i/	
			/e/			/e/		/o/
	/a/			/ɑ/			/a/	

The first type, put forward by Williams (1976) in his review of Ó Máille's *Liosta Focal as Ros Muc*, argues for a front-back distinction only for low vowels 'in IarChonnachta generally'. Hickey's (1986) description of Cois Fhairrge and Holmer's description of Clare dialects both argue for a front-back distinction but only for mid-vowels.[3]

According to Crother's (1978: 109-10) system of classification, there are two types of 4V system /i ɛ a u/ and /i ɨ a u/ ('which [both] might be characterised as /i ə a u/'), none of which describes either of the 4V systems suggested for Irish dialects. 4V systems account for 6% of Crother's sample. It should be noted that there are a number of problems with Crother's system of classification, see Lass (1984: 137,140).[4] For our puposes, we may note that in languages which only have one back rounded vowel '[o] or lower' in some cases 'bordering on the [u] area' Crothers interprets [o] phones as /u/ 'thus in fact defining typology in terms of an a priori notion of what a natural language ought to contain' (Lass 1984: 137). If we interpret [o] phones as /o/ phonemically, we get a different picture. It emerges that some languages (e.g. Campa, Hupa, Mazatec, Navaho, Oneida (Crother's 1978: 138)) do in fact have 4V systems of the type /i e o a/ similar to that put forward by Holmer for Clare dialects. It is worth noting that the 4V system put forward by Williams (1976) does not appear to be attested for any languages in Crother's corpus. Crother's (1978: 110) adds the following note with regard to 4V systems:

> As in three vowel systems, there is considerable variation, especially in the position of the back vowel, and the general statements made with regard to the specific phonetic character of vowels in a three vowel system apply here too.

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[3]Both use different symbols. Holmer uses /ə/, /e/, /o/, /a/; Hickey prefers /I/, /ɛ/, /ʌ/, /a/.

[4]Lass (1984: 140) even goes as far as to say that 'in the end [Crother's scheme] probably can't be accepted'. His analysis nevertheless provides a useful general comparator.

5V system

A 5V system is by far the most common vowel system which has been suggested for Irish dialects. It has been put forward in IR, IT, IE, Ó Dochartaigh 1972, Ó Sé 1982 etc. It is also the only system 'that occurs with any frequency' according to Crothers (1978: 110); it accounts for 26% of Crother's sample. Lass (1984: 143) also notes that '5-vowel systems are the commonest'. 'The most typical contrast two heights in front and back with a low central vowel, though there are variants with three heights in front, or two central.' (Lass 1984: 143). Hickey (1986: 214) argues in the case of Irish that this model has suffered from 'the adverse influence of the orthography on phonological analysis'. We saw in chapter 1 that it is a quinary triangular system which is generally put put forward for earlier stages of the language also.

6V system

6V systems have been suggested for some Munster, Connacht and Donegal dialects. Ó Cuív (IWM) proposes the following system for IWM:

/i/	/u/
/e/	/o/
/a/	/ɑ/

De Bhaldraithe (ICF) proposes a similar system although there is a slight difference in vowel symbolisation and also in the placement of the low vowels in the phonological vowel space:[5]

/i/	/u/
/e/	/o/
/æ/	
/a/	

Sommerfelt (1965: 238) proposes the following system for Torr, Co. Donegal

/i/	/u/
/e/	/o̝/
/a/	/ɔ/

Although /ɔ/ represents unrounded vowels (DT: 25), the apparent similarity in phoneme inventory is not matched by phoneme incidence. The differences between

[5]De Bhaldraithe's (ICF) proposed 6V system is discussed in some detail separately below.

the IWM and the DT systems are best illustrated by means of the following diasystem:[6]

$$\text{IWM, DT } //e \approx i \approx u \approx \underset{\text{DT}}{\underline{\text{IWM a}\sim\text{ɑ}}} \approx \underset{\text{DT o}\sim\text{ɔ}}{\underline{\text{IWM o}}} //$$

This diasystem clearly indicates the lexical correspondences involved. The lexical set involving DT /a/ corresponds to the lexical sets involving IWM /a/ and /ɑ/ whereas the lexical set involving IWM /o/ corresponds to the lexical sets involving DT /o/ and /ɔ/.

6V systems are not common according to Crothers. They account for 7 languages of his overall sample of 209 languages, i.e. for less than 3.5%. These systems 'show more variety' than any of the systems decribed above (Lass 1984: 144). 'Some use three heights in one or both series, others have rounding contrasts at one height in a series.' (Lass ibid). Systems similar to those put forward for IWM and DT (bearing in mind that /ɔ/ in DT represents an unrounded vowel) occur also in Persian and Lithuanian (Crothers 1978: 140).

Discussion

As there are common issues involved in the interpretation and analysis of some of the vowel systems listed above, these issues will be singled out and treated separately rather than discussing each under the heading of the individual system in which they arise. Most of the issues involved have to do with the front-back opposition. In one case the distinction between high and mid back vowels is in question. The issues which arise may be categorised as follows:

(1) front-back contrasts
  (a) the /i/~/u/ contrast
  (b) the /e/~/o/ contrast
  (c) the /a/~/ɑ/ contrast[7]

(2) the /u/~/o/ contrast

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[6]For the use and origin of the concept of a diasystem, see Chambers (1980: 40-45).
[7]Or /æ/~/a/ in the case of ICF.

(1) Front-back contrasts

All 3V and 4V systems imply that there is no phonemic contrast between back and front high vowels. The 3V and one of the 4V systems (that advanced by Williams 1976) further implies that there is no phonemic contrast between back and front mid-vowels. The phonemic contrast between back and front low vowels is suggested only for the 6V and one of the 4V systems (that advanced by Williams 1976).

As we shall see, it is the apparent complementary distribution between front and back vowels of the same height which has led some scholars to posit one high and one mid short vowel phoneme for Irish dialects (although none have seen fit to present the evidence for this complementary distribution) Skerrett (1969), Bliss (1972), Williams (1976), Holmer (1962), Hickey (1986). However, all of these accounts of the phonology of Irish dialects fail to take cognisance of the most fundamental condition for allophonic status, i.e. phonetic similarity (Hawkins 1984: 26-30). As we shall see below, high and mid front, and high and mid back vowels are phonetically different. The phonetic dissimilarity of [i] and [u] phones for instance, is the strongest argument which can be advanced in support of the phonemic status of /i/ and /u/. See Ó Murchú (1969: 347).

However, phonetic similarity in itself is not sufficient to establish the phonemic status of phones, see Hawkins (1984: 26-32). A priori notions of what constitutes phonetic similarity can be misleading. Observations on phonetic similarity in the case of Irish dialects has focused only on the manner of articulation of individual phones, see Ó Murchú (1969: 347). However, phonetic similarity can be viewed from a number of perspectives, including articulatory, acoustic and auditory (Hawkins 1984: 28). While [i] and [u] phones are dissimilar in articulatory terms, it is unclear, in the absence of research in this area, what auditory impression native speakers have of these phones. Until this type of research has been conducted, we will not know the whole answer to the phonemic status of the high and mid vowels in Irish dialects. In the absence of native speaker intuition, we must rely on the evidence for contactual allophones, i.e. phones which can be predicted according to environment.

The most extensive treatment of the front-back contrast in Irish dialects to date is Ó Sé (1982: 29-33) although Ó Murchú (1969: 346-7) adds a number of important points to the debate. Ó Murchú rejects Holmer's (1962: 23) claim that the 'vowel [i] has not been proved to exist as short in an independent phonemic function in the Clare dialects. We have therefore assumed that *i* occurs as a long vowel only.' Ó Murchú

cites against Holmer the examples *tuirse, suidhtar* where stressed [i - I] occurs in the environment C __ C, thus contrasting with [u - U]. However, it is not clear if these examples have been quoted directly from either of Holmer's two volumes on Clare dialects or whether they are forms which are generally to be found in Munster (and other Irish) dialects and so might be expected to occur in Clare dialects also. As a counter-example to Holmer's (1962: 22) claim that 'no words could be recorded which would be distinguished by the *i*- or *u*-shade', Ó Murchú (1969: 347) cites *ritheadh* /rihəg/ ~ *ruthag* /ruhəg/ and adds that 'most Munster dialects have forms analogous to these'. These examples do indeed provide a minimal pair from a classical phonemic point of view which does not allow non-phonological information to be used in phonological analysis. Less strict phonemic analyses which permit communication between different levels of description would argue that *ritheadh,* which is bimorphemic {*rith*}+{*adh*}, is not comparable with *ruthag* which is monomorphemic. These examples are analogous to the pairs *heed* [hid] ~ *he'd* [hi:d], *road* [rod] ~ *rowed* [ro:d] etc. in Scottish English, which if taken at face value without recourse to morpheme boundaries, would imply a phonemic length contrast in Scottish English which is otherwise unsupported. See Lass (1984: 31-34) for discussion.

Ó Murchú (1969: 347) also argues for a /i/~/u/ contrast from the point of view of phonological symmetry. He says: 'since the front-back feature is distinctive in the case of long vowel phonemes, symmetry would suggest analysing [i - I - U - u] as /i ~ u/' and adds the note that 'this analysis would have to allow for a great deal of free phonemic alternation' between /i/ and /u/. Symmetry, in this case between short and long vowel systems, since it is an abstract constraint placed on phonological analysis, is not a good argument for phonemic contrasts within the short vowel system. It is widely known that long and short vowel systems need not match either in number or quality, see Lass (1984: 144), Crothers (1978). In the case of Irish, it should be noted that by evoking the symmetry argument, another general principle of phonemic analysis is simultaneously violated, i.e. the principle which makes systems as simple as possible and minimises the number of phonemes, see Lass (1984: 25).

Ó Murchú's (1969: 347) most cogent point refers to the clearly different phonetic quality of the [i - I] and [U - u] vowels. He says that 'what Holmer calls the "*i*-shade" of [ə] (sic) is phonetically quite different from what he calls the "*u*-shade"'.

Ó Sé's (1982: 31) treatment of this matter deals mostly with the question of complementary distribution between [i] and [u] vowels. He claims that both phones can occur in similar phonological environments and concludes, solely on this basis, that there is a phonemic distinction between /i/ and /u/ (Ó Sé 1982: 32). He notes that both phones occur in the environments C __ C, C __ #, # __ C, C' __ #. He also notes that variation occurs between [i] and [u] in the environment C' __ C in certain words, e.g. *mion*.

Ó Sé's analysis is questionable in a number of respects. Besides admitting bimorphemic words into his analysis which as we have argued above is unsatisfactory for the purposes of phonemic analysis, his use of the term phonological environment is objectionable. His interpretation of 'environment' is set at a level which is higher than that which is normally used for the identification of phonemic contrasts. His phonological environments effectively represent macro-environments which are defined according to one single secondary articulatory feature, namely [+/– velarised].[8] Such a broad definition of phonological environment, which does not discriminate between primary features such as place and manner of articulation, inevitably leads to an oversimplification of the facts.

If we consider a micro-definition of phonological environment which includes individual phonemic segments, a different analysis of Ó Sé's material suggests itself as the following table illustrates. The general rule for the occurence of [u] and [i] phones in Corca Dhuibhne is that [u] and [i] occur mostly in nonpalatal and palatal environments respectively. Apparent exceptions to this are contained in the following table:

[8]All consonants in Munster dialects can be classified as either [+/– velarised].

Exceptions to the rule in Corca Dhuibhne:
[u] / C __, __ C, [i] / C' __, __C'

Examples	Macro-phonological environment	Micro-phonological environment
tuirse, guirt[9]	[i] / C __ C	[i] / C __ r(')C'
rith[10]	[i] / C __ #	[i] >> [u] / r __ #
iomall[11]	[i] / # __ C	[i] >> [u] / # __ m
ithtar, ithtaí	[i] / # __ C	[i] / __ + C
ith	[i] / # __ #	[i] / # __ #
triubh	[u] / C' __ #	[u] / t'r' __ #

Table 2A.1

We can dismiss *ithtar, ithtaí* (vb) since they contain morpheme boundaries. Words of the shape CirC' (*tuirse, guirt*), though they provide potential near-minimal pairs for contrast with words of the shape Cur(C), do not provide sufficient evidence for the contrast /i/ ~ /u/ between nonpalatals. Ó Murchú (1969: 346, n.3) and Ó Sé (1982: 32) both point out that [rC'] clusters could represent /r'C'/ in phonological terms. However, leaving aside abstract considerations of how we choose to represent phonetic [rC'] clusters, either as /rC'/ or /r'C'/ clusters, it should be clear that the occurrence of [i] in the environment [C __ rC'] can be stated in terms of a simple realisational rule which yields [i] before [rC'] clusters. Although both [i] and [u] occur in the macro-environment C __ #, [i] occurs only as a variant to [u] in *rith* (with initial broad /r/). Although both phones occur word finally, [u] does not appear to occur in the environment # __ #. Similarly, both phones occur in the environment C' __ # but [u] appears to occur only in the environment t'r' __ # (e.g. *triubh*). *Triubh*, a loanword from English, is marginal to the phonological system of Irish. This word illustrates how lexical borrowing can affect the phonology of the borrowing language. The effects of lexical borrowing on the phonology of Gaelic is discussed briefly in chapter 8. In the environment # __ m, [u] occurs frequently. However, in the case of *iomall*, both /i/ and /u/ are attested. The word *iomall* when realised as /i/ contrasts with /u/ in the likes of *iomaire, iomadúil* (Ó Sé 1982: 41).

Our discussion of Ó Sé's material illustrates that the functional load of the [i]~[u] opposition is very low indeed in the dialect of Corca Dhuibhne (as described by Ó Sé) and depends mainly on the realisation of *rith* as [i], *triubh* as [u] and of *iomall* as [i]. Otherwise, [i] and [u] phones are in complementary distribution in this dialect.

[9]Plural of *gort*, spelled by Ó Sé as *goirt*.
[10][u] also occurs in this word.
[11]Some speakers have [u] in this word.

Since /e/ and /o/ mostly occur before palatal and nonpalatal consonants respectively in this dialect, Ó Sé (1982: 31) argues that there is a phonemic contrast between /e/ and /o/ because both can occur before the broad segments /r/ and /x/. However, a consideration of micro-phonological environments, shows that Ó Sé's examples for the occurrence of /e/ before /r/ and /x/ can be dismissed. We will see that both phones are in fact in complimentary distribution:

Exceptions to the rule in Corca Dhuibhne:
[o] / __ C, [e] / __C'

Examples	Macro-phonological environemnt	Micro-phonological environment
beirt	[e] / C' __ r	[e] / b' __ r(')t'
beirtear	[e] / C' __ r	[e] / {b' __ r'} + {*tər*}
bheadh	[e] / C' __ x	[e] / {v' __ } + {*conditional*}

Table 2A.2

The case in point illustrates the dangers of relying on broad macro-phonological environments in order to establish phonemic contrasts for Irish. Although [o] phones occur in the macro-phonological environment C' __ C, e.g. *deoch, seachas* etc., [o] phones do not occur in the micro-phonological environments b' __ x, b' __ r. In other words, there can be no question of a contrast between [o] and [e] phones in the environments b' __ x, b' __ r. Furthermore, *beirtar* and *bheadh* may be dismissed on the grounds that they are both bimorphemic. The occurrence of [e] in *beirt* can be expressed as a realisational rule which yields [e] before /r(')C'/ groups. In conclusion, we see that there is good evidence to support the claim that [e] and [o] are in complementary distribution in the dialect of Corca Dhuibhne. It is possible to argue on this basis that [e] and [o] are allophonic variants of the same mid vowel phoneme /ə/. Ó Sé's (1982: 32) question: 'Cén fáth go gcoinnítear an guta [e] tríd síos sna foirmeacha [b'eg'], [v'ex], [v'efa:] ɾrl. mura bhfuil a leithéid d'aonad fóneolaíochta ann agus /e/?' is easily answered when we consider that these bimorphemic verbal forms all contain the underlying future root {/*b'e*/} of the verb *bí* 'be'. An allophonic rule would assign [e] phones to the position immediately following palatals:

$$/ə/ \quad \rightarrow [e] / C' \_\_ \ , C' \neq ʃ^{12}$$

[12]/o/ occurs following /ʃ/ in *seo, anseo*.

We have now established that the mid vowels [e] and [o] are in complementary distribution and that the high vowels [i] and [u] are in near-complementary distribution for the dialect of Corca Dhuibhne as described by Ó Sé. Complementary distribution between phones and the absence of convincing minimal pairs is in itself insufficient to establish phonemic or allophonic status.[13] Moreover, in establishing the phonemic and allophonic status of phones, other factors such as phonetic similarity (Hawkins 1984: 26-7; Ó Murchú 1969: 347) and, perhaps more importantly, native speaker intuition (Hawkins 1984: 22) need also to be taken into account. Based on the criteria of phonetic similarity alone, one would be inclined to assign front and back phones to separate phonemes (cf. Ó Murchú (1969: 347) and discussion below). As far as native speaker intuition is concerned, it is extraordinary that there exists not one single published account of the views of native Irish speakers on the front-back oppositions.[14]

The phonetic facts need to be examined minutely for each dialect before any firm conclusions can be reached with regard to front-back phonemic contrasts in individual dialects. What follows is a detailed examination of the incidence and distribution of the front and back vowel phones [i]~[u], [e]~[o], [a]~[ɑ] in the dialect of ICF as described by de Bhaldraithe (1945, 1953). We have chosen ICF for the reason that it contains the most minute account of allophonic variation amongst Irish monograph dialect studies and also because it is similar to the dialect of Irish with which the author is most familiar.[15] Much of what follows, notwithstanding minor phonetic and lexical differences, also applies to other Irish dialects (exclusive of Donegal dialects). It is hoped that this minute examination of one dialect will illustrate some of the difficulties involved in establishing the phonemic status of short vowels in Irish dialects generally (exclusive of Donegal dialects).

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[13]Cf. the classic case of complementary distribution between [h] and [ŋ] in English (Hawkins 1984: 27). Hawkins (1984: 20) also notes that 'not all languages afford examples of minimal pairs as readily as English'.

[14]Among Irish dialectologists, De Búrca, author of IT, is the only native speaker. It is interesting to note that while he maintains the front-back oppositions in his phonemic analysis, he seems to analyse [e], [o] phones in the environment C __ C' as allophones of the phoneme /e/. However, given that he transcribes phonemic /ə/ (i.e. short unstressed vowels) variously as /e/, /i/, /o/, /u/, we cannot place too much confidence in the economy of his phonemic analysis.

[15]In analysing de Bhaldraithe's corpus, we are aware that his database is limited and that there is perhaps more back-front variarion in this and related dialects than de Bhaldraithe himself reports. Our analysis of ICF has the advantage that it reveals the patterns of usage of one single speaker, see ICF: x.

[i]~[u]

The [i] and [u] phones which are described by de Bhaldraithe for ICF can be plotted as follows:

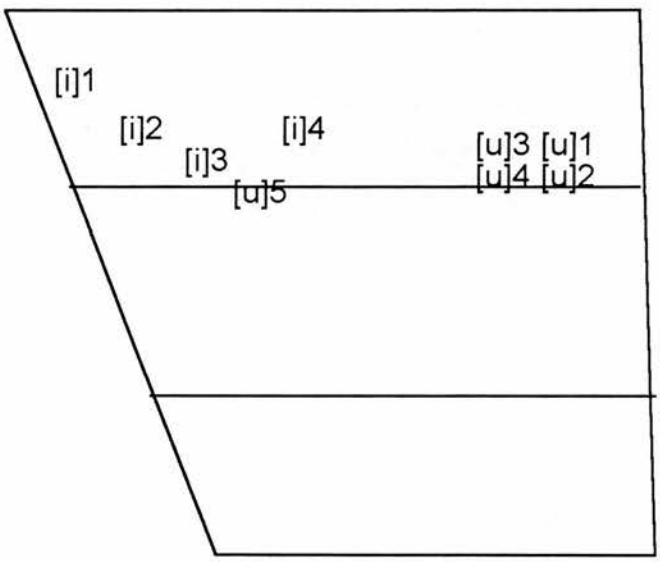

Figure 2A.1: Distribution of [i] and [u] phones in ICF
(based on ICF and Jones (1936))

Their distribution according to environment is as follows:

[i]	
C' __ C'	[i]1
# __ C'	[i]2
C' __ s	[i]2
C __ C', C = /d t r s/	[i]2
C __ C', C ≠ /d t r s/[16]	[i]2 ~ [u]3
C' __ #	[i]3
h __ #	[i]3
C' __ C, C' ≠ ʃ, C = r s N t h (d?)	[i]4

[u]	
# __ C	[u]1
C __ C	[u]1
C __ #	[u]2 (some also use [u]4, others [u]5 in *dubh*)
C' __ C, C ≠ r s N t h (d?) unless C' = ʃ	[u]3

[16]In 'a monosyllable or in a word of two syllables where the second one contains a neutral vowel'. ICF: 10.

C' __ #	[u]4 ([u]4 ~ [i]2 in *tiugh, inniu* with some speakers)
s __ #	[u]4
t __ t, s	[u]4

[u]2 is often used in place of [u]1 in the environments C __ N, m, and also C __ Ca:, o:.

It is clear from the above that both [i] and [u] phones occur in the macro-environments C __ C', C' __ #, C' __ C. For some lexical items, there is variation between [i] and [u] phones in the environments C __ C' (*cuid, muid*) and C' __ # (*tiugh, inniu*) but [i] and [u] forms are apparently invariant for lexical items of the shape C' __ C.[17] A close examination of the data shows that the distribution of [i] and [u] in the macro environment C' __ C is in fact complementary as the following lists illustrate:

[i] / C' __ r s N t h (d?), C'≠ʃ	*bior, bearrán, giorrú, giorria, giorrachan, fios, ciontach, mionta, meannán, giota, ciotach, bioth, leadán*
[u] / #, C' __ C otherwise	*iompaigh, diomailt, diomar, triompán, sciob-, liobar, trioblóid, preabán, s(h)iopa, sioc, p(h)ioc, tiocair, t(h)iocf-, sionnach, siota, siod-bháisteach, siod-mhagadh*

It is difficult to know in some instances whether the distribution between [i] and [u] phones would be better described in terms of micro-phonological or lexical rules, e.g. [i] occurs in *brionglóidí, beanglán* but [u] in *giongach* where either description would suit. It is remarkable that all instances (including *brionglóidí, beanglán, giongach*) of [i] and [u] phones in the environment C' __ C can be described in terms of realisation rules. Leaving aside cases of variation between [i] and [u] phones (which are themselves definable by micro-phonological environment, at least in C __ C'), it is clear that [i] and [u] in ICF are in complete complementary distribution.

[17]However, in his discussion of the /u/ phoneme in the environment C' __ C (ICF: 15), de Bhaldraithe refers the reader to ICF: 10 where variation between allophones of /i/ and /u/ are discussed. Although the examples which he quotes do not include instances of C' __ C, this cross reference would seem to imply that variation between /i/ and /u/ in this environment was in fact a feature of ICF.

All [i] phones are unrounded vowels and all [u] phones, despite the advanced position of some (especially [u]5), are nevertheless rounded vowels. The phonetic dissimilarity of [i] and [u] phones is the strongest argument which can be advanced in support of the phonemic status of /i/ and /u/. See Ó Murchú (1969: 347). While [i] and [u] phones are dissimilar in articulatory terms, it is unclear, in the absence of research in this area, what auditory impression native speakers have of these phones.

Another useful parameter in establishing the phonemic status of phones is the evidence for contactual allophones, i.e. phones which can be predicted according to environment. Both phones [i] and [u] occur in the macro-environments C __ C' and C' __ C. However, [i] phones occur in the environment C __ C' when C = /d t r s/ but variation between [i] and [u] phones occurs following velar and velarised segments, e.g. C = /k g m/. The segments /d t r s/ form a distinct class in the dialect of ICF. They can be classified as [–velarised] ([–palatalised]), see ICF: 24. We can see that the occurrence of [u] phones in the environment C __ C' is 'predicted' by the quality of the preceding velar or velarised consonant. The occurrence of rounded vowels following velar or velarised segments is well motivated phonetically. Velar or velarised segments and back (rounded) vowels share the common acoustic feature of [+grave] as both have relatively low pitch.[18] The realisation rules can be set out as follows:

[u] >> [i]	/ C __ C', C = [+velar] or [+velarised]
[i]	/ C __ C' otherwise

The distribution of [i] and [u] in the environment C' __ C can be set out as follows:

[i]	/ C' __ s, r, Nt, t, h, d	(C' ≠ ʃ)
[i]	/ m' __ Na:	
[i]	/ b'r' __ ŋgLo:, b'(r') __ ŋgLa:	
[u]	/ C' __ m, b, L, k, N	
[u]	/ g' __ ŋg	

This distribution can be expressed in terms of the following realisation rules:

[18]See Hawkins (1984: 84, 94, 255) for a discussion of the feature [+grave] and its opposite [+acute] in English.

[u] / C' __ C, C = [+velar] or [+velarised]

[i] / C' __ C, C = [–velarised][19]
/ C' __ C, C' = [+labial], [+palatalised][20]

The distribution of both phones is well motivated phonetically. We have already discussed the occurrence of [u] in the environment of [+velar] and [+velarised] segments and [i] in [–velar] and [–velarised] environments. It is not clear if the occurrence of [i] in b'(r') __ ŋ and [u] in g' __ ŋ is articulatorily or acoustically motivated. The occurrence of [i] following palatalised labials in m' __ N, b'(r') __ ŋ but [u] in g' __ ŋ might suggest that palatalised labials are acoustically more front than palatalised velars. This would suggest classifying palatalised labials as [+acute] and palatalised velars as [+grave].[21] Further research is needed to validate such a classification, however.

Our discussion of the distribution of [i] and [u] can be stated in terms of allophonic rules, the complementary nature of which, can in many clases, be explained as contactual co-articulatory phenomena. In the absence of native speaker intuition, this suggests that [i] and [u] are in fact allophones of the same phoneme.

[e] ~ [o]

The [e] and [o] phones may be plotted and described as follows:

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[19]The cluster /Nt/ would have to be classified as [–velarised] if the ocurrence of /i/ in *ciontach* /k'iNtəx/ is to be explained. A less velarised allophone of /N/ would be expected before /t/ in this dialect but de Bhaldraithe does not draw attention to this.

[20]The following environment would also cover cases like /i/ *mionnán, brionglóidí*: C' __ CV:, V: = /a:/, /o:/.

[21]This classification may not hold true for all dialects. There is some evidence which might suggest that palatalised labials and palatalised velars are accoustically similar in IWM. See discussion below of the [a:]~[ɑ] opposition in IWM below.

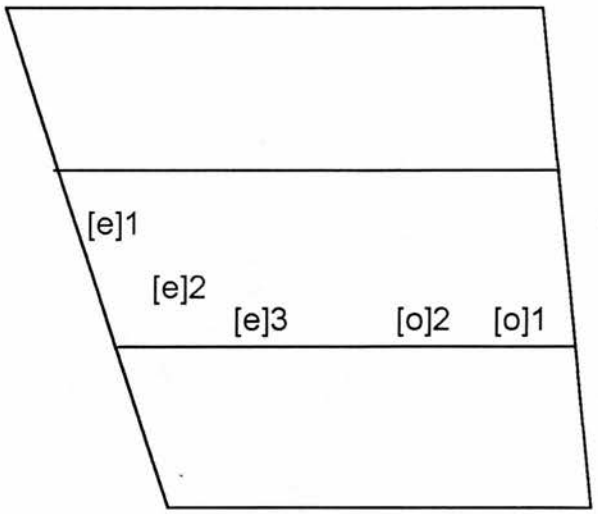

Figure 2A.2: Distribution of [e] and [o] phones in ICF

[e]	
# __ C'	[e]1
C' __ C'	[e]1
C' __ rC', rC	[e]2
C' __ #	[e]2
C __ C'	[e]3
C __ C', C=/g k b w N/	[e]3~[o]2

[o]	
# __ C	[o]1
C __ #	[o]1
C __ C	[o]1
C' __ x	[o]1
C __ C'	[o]2
C' __ g	[o]2

The distribution of [e] and [o] phones closely parallels that of [i] and [u] in ICF. The phones [e] and [o] occur in complementary environments except for the environments C __ C' and C' __ C where both are attested. As with [i], [u], for some lexical items, there is variation between [e] and [o] phones in the environment C __ C' where C ≠ /d t r s/, e.g. *goid, coileach*. In the environment the C __ C', the distribution between [e] and [o] can be described in terms of a realisation rule:

[o]~[e] / C __ C', C = [+velar] or [+velarised]
[e] / C __ C' otherwise

Forms with [e] and [o] phones are invariant for lexical items of the shape C' __ C, #. An examination of the data shows that the distribution of [e] and [o] in the macro-environment C' __ C is in fact complementary as the following list illustrates:[22]

[e]	/ C' __ C, C=/rC' rC/	*beirt, ceirtlín, deireannach*[23]
	/ C' __ # (C' ≠ ʃ)	*te, bheith*
[o]	/ C' __ C otherwise	*deoch, fliuch, beag, deacair*
	/ ʃ __ #	*seo, anseo*[24]

Although [e] and [o] phones are not differentiated by lip rounding as in the case of [i] and [u], both varieties are nevertheless phonetically quite distinct. Leaving aside the front-back distinctions in tongue position, [e] and [o] phones have different lip positions. De Bhaldraithe (ICF: 11-2) describes [e] phones as 'spread' vowels, i.e. they are formed with spread lips whereas [o] phones are described as having 'neutral lip position' (ICF: 24).[25] The [o] phones are unrounded and as such are more appropriately symbolised by the IPA symbol [ʌ]. Cf. Hickey (1986: 216).[26] The phonetic dissimilarity of [e] and [o] phones is the strongest argument which can be advanced in support of the phonemic status of /e/ and /o/. Cf. above. Both sets of phones could be differentiated by the features [+/–back] and [+/–spread]. It should also be noted that although the occurrence of [e] and [o] phones in the environments C __ C' and C' __ C can be explained in terms of contactual co-articulatory phenomena, as with [i] and [u], it is difficult to explain the occurrence of [o] in the environment ʃ __ # in these terms. There is no protrusion or rounding of the lips for Irish /ʃ/ as in English. See ICF: 32-3, Jones (1936: 176). However, we should note that not all allophonic variation 'can be explained by appealing to the interlinked notions of co-articulation' (Hawkins 1984: 35). We may compare the distribution of /l/ allophones in RP English which cannot be accounted for in contactual co-articulatory terms.

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[22]I have not included in my analysis bimorphemic forms such as the future and conditional of the verb *bí*.

[23]Realised as /d'erNəx/ in ICF.

[24]Unlike [i]~[u], there appears to be no variation between [e] and [o] in the environment C' __ #. This no doubt is due to the fact that *seo* with initial /ʃ/ (cf. /u/ / ʃ __ C) is the only instance of a word with the shape C' __ # in Irish dialects generally where we might expect a short /o/ (or /e/) as a reflex of //o//. Although de Bhaldraithe does not report variation between /e/ and /o/ in the case of *seo, anseo*, such variation does exist in other south Connacht dialects. Ó Curnáin (1996: s.v. Adverbs) notes that //o// os more common than /e/ in these words.

[25]See Jones (1936: 39) for definitions of 'spread' and 'neutral'.

[26]Note, however, that ICF [ʌ] differs from English [ʌ] in that the latter is formed with spread lips. Jones (1936:84).

Our discussion of the distribution of [e] and [o] can be stated in terms of allophonic rules, the complementary nature of which can in most clases be explained as contactual co-articulatory phenomena. In the absence of native speaker intuition, this suggests that [e] and [o] may in fact be allophones of the same phoneme.

[a] ~ [ɑ]

It should be noted that in the following our [a] and [ɑ] correspond to [æ:], [æ] and [a:], [a] respectively in ICF. Although phonetically long, except before intervocalic /h/, these vowels are analysed here, in agreement with Hickey (1986: 215), as belonging to the short vowel system.[27]

The varieties of [a] and [ɑ] phones may be plotted as follows:

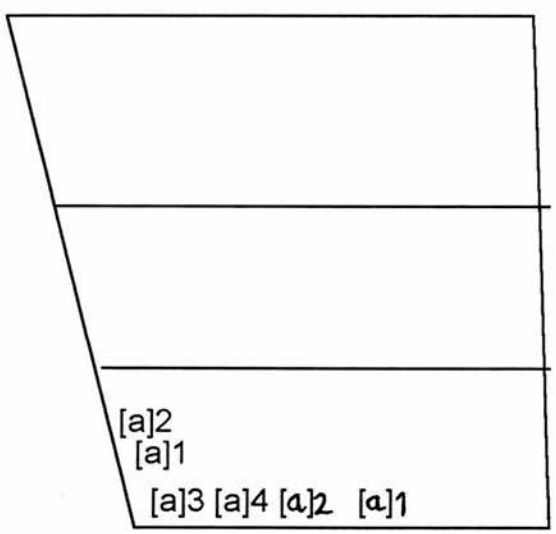

Figure 2A.3: Distribution of [a] and [ɑ] in ICF

The distribution between the phones [a] and [ɑ] is similar to that of [i] and [u], and [e] and [o], as the following lists illustrate. The distribution of both varieties according to environment is as follows:

[27]De Bhaldraithe in his later work *Foirisiún Focal as Gaillimh* (1985) collapses the distinction between the four *a*-vowels /æ(:)/ and /a(:)/ used in ICF to one /a/. Cf. Wagner's note on Cois Fhairrge in LASID I: 131 which remarks that it is very difficult to distinguish between [a] and [ɑ] in this dialect.

[a]	
# __ C'	[a]1
# __ s	[a]1
C' __ C	[a]1
C' __ #	[a]1
t' d' N' __ x	[a]1~IPA [a̪]
C' __ C	[a]2
C __ C'	[a]3
h __ C	[a]3

[ɑ]	
# __ C	[ɑ]1
C __ C	[ɑ]1
C __ #	[ɑ]1
C __ C'	[ɑ]2
ʃ __ C, C=/k g x/	[ɑ]2

It will be clear that both [a] and [ɑ] occur in complementary distribution although both occur in the environments C __ C' and C' __ C. However, it can be shown that the distribution of [a] and [ɑ] in both of these environments is complementary. The distributional rules for each are as follows:

[a]	/ C __ C', C = /t s d r h/	*tais, sail, dair, craiceann, raithneach, sheadaigh*
[ɑ]	/ C __ C' otherwise	*cainnt, bainne, Gaillimh, paiste*
[ɑ]	/ C' __ C, C'=/ʃ/, C=/g x/ (/k/?)	*seacht, seagal, (seachtain?)*
[a]	/ C' __ C otherwise	*ceas, cead, bean, beart, mear*

The distribution in the environments C __ C' and C' __ C can be stated in terms of the following realisation rules:

[ɑ]	/ C __ C', C = [+velar] or [+velarised]
[a]	/ C __ C' otherwise

[ɑ]	/ C' __ C, C = [+velar]
[a]	/ C' __ C otherwise

De Bhaldraithe (ICF) notes that both varieties [a] and [ɑ] are 'spread' vowels. It is clear from figure 2A.3 that both varieties occupy adjacent phonetic spaces. Their distribution in this space is not as wide as that of [i]-[u] or [e]-[o]. There is no reason

on phonetic or distributional grounds to interpret both varieties of [a] and [ɑ] phones as representing discrete phonemes. The [a] and [ɑ] phones are clearly allophones of a low vowel which we may symbolise as /a/. This is the conclusion reached independently by Sommerfelt (1949: 417), Ó Murchú (1969: 346) and Ó Sé (1982: 31-2).[28] Ó Murchú (1967: 210) notes that 'the phonetic range ([a—ɑ]), in all dialects where it occurs, always represents a single phoneme /a/'. We will see in our discussion of Donegal dialects below that this statement does not hold for all Donegal dialects.

It is interesting to note that de Bhaldraithe notes variation between [a]1 and [a]4 in the environment t' d' N' __ x (ICF: 12) e.g. in the words *teach, teacht, isteach, sneachta* but not in words of the shape ʃ __ x g which according to ICF: 13 always have the [ɑ]2 allophone. However, in his later study, *Gaeilge Chois Fhairrge*, he consistently uses [æ:] i.e. our [a] in words of the shape ʃ __ x g e.g. *seacht, seachtain, seagal*. It is clear from figure 2A.3 above that the allophones [a]4 and [ɑ]2 are quite close phhonetically. The variation reported in ICF between [a]1 and [a]4 (perhaps [ɑ]2?) in the environment t' d' N' __ x and the variation between [ɑ] in ICF and [a] in GCF in the environments ʃ __ x suggests that a similar variation between [a] and [ɑ] phones, as occurs in the environment t' d' N' __ x, also occurs in ICF in the environment ʃ __ x. Wagner's difficulty in distinguishing between [a] and [ɑ] phones in this dialect, and de Bhaldraithe's inconsistency in this matter between his two major works ICF and GCF, suggests that variation between front and back low vowels is more common than de Bhaldraithe leads us to believe. It follows that an arbitrary division between front and back articulations in phonemic terms is unhelpful. We conclude that variation between [a] and [ɑ] phones in this dialect is subphonemic. It is significant that de Bhaldraithe (1985) uses only one symbol /a/ for the short low vowels.

Front-Back Contrast

We conclude that there is very good evidence indeed for the lack of a front-back contrast in high and mid and low short vowels in the dialect of ICF. Similar analyses are possible for all Irish dialects. This conclusion, however, takes no account of native speaker intuition and so the question of the phonemic status of high and mid vowels, in particular, in Irish dialects must remain unresolved for the time being, at least until such factors are properly researched and brought to bear on the data.

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[28]It is of course also implicit in IR, IT, IE.

If a linear 3V system /i ə a/ were to be adopted to describe the dialects of Modern Irish in the present study, much phonetic information would be lost or concealed from the historical discussion. For this reason particularly, but also because of the doubt which exists regarding a 3V system for Irish, a traditional 5V system has been adopted in the present study to represent the vowels of Irish dialects, excluding those of Donegal to be discussed presently. This has the further advantage of facilitating comparison with the 5V protosystem of CG.

Donegal dialects

More work has been published on Donegal dialects than on any other Irish dialects; see Quiggin (1906), Sommerfelt (1922), Ó Searcaigh (1925), Wagner (1959), Evans (1969), Hamilton (1974), Stockman (1974), Lucas (1979). Most of this work, largely phonetic studies of individual dialects, could be classified as non-structuralist and in some cases deliberately anti-structuralist. There are regrettably no phonemic accounts of Donegal dialects in the Dublin Institute for Advanced Studies monograph series which would provide a much-needed basis of comparison with other dialect areas. There are surprisingly only two published and one unpublished account which seek to establish the phonemic inventory of a particular Donegal dialect, namely Sommerfelt (1965), Hughes (1994) and Ó Dochartaigh (1972) respectively. Unfortunately, none of these accounts provides a detailed description of the distribution of the various allophones of each phoneme. Furthermore, the analysis which is presented in Hughes (1994) is fraught with many difficulties and is, from the phonemic point of view, ultimately unreliable.[29]

The great wealth of phonetic material on Donegal dialects presents many problems of interpretation from the phonemic point of view. There is the practical difficulty of reconciling the wide diversity of symbols used. There is also the further complication of attempting to establish the phonemic inventory of a particular dialect based on a fixed corpus without recourse to native speaker intuition and further information of that sort. Some of the complexities may be seen from the following table containing the phonetic symbols used by Quiggin (1906), Sommerfelt (1922), Wagner (1959),

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[29]See Hughes (1994a: 126) for details. It appears that the phonemic analysis in Hughes (1994) is the work, not of the author, but extraordinarily, of the editors of that publication. Some of the conflicting and misleading interpretations in Hughes (1994), particularly of the vocalic system, are rectified in Hughes (1994a).

Hamilton (1974), where + indicates that a particular symbol is used, and – indicates that a symbol is not used in the relevant dialect study:

Symbol	DD	DT	GT	TY
i	+	+	+	+
ï	+	+	+	+
I	-	-	+	+
y	+	+	+	+
e	+	+	+	+
è	-	+	+	-
ɛ	+	+	+	+
ɛ̀	-	-	+	-
æ	+	+	+	-
a	-	+	-	+
E	-	+	-	+
ö	-	-	+	+
ø	-	-	+	+
ə	-	-	+	+
ɑ	-	-	+	+
ɑ	+	+	-	-
ɔ	+	+	+	+
o	+	+	+	+
o̟	+	+	+	+
U	+	+	-	-
u	-	+	+	+
ʎ[30]	+	+	(+)[31]	+

Table 2A.3: short vowel symbols used to describe Donegal dialects

There are 22 symbols used overall in these four monographs alone. Only 10 of these are common to all four, namely, [i ï y e ɛ æ ɔ o o̟ ʎ]. This number could be raised to 11 or 12 if we ignore the typographical difference between (i) [ɑ] (DD, DT) and [ɑ] (GT) and (ii) [U] and [u]. The remaining symbols reflect modifications or refinements to the common core set of symbols, originally laid down by Quiggin (DD). Sommerfelt (DT) added 4 extra symbols [è E a u]. Wagner (GT) added 5 new symbols [I è ɛ̀ ö ø ə u] to Quiggin's and Sommerfelt's inventory.

Perhaps the greatest problem which faces the phonemicist of Donegal dialects is how to interpret phonemically the large number of central phones which occur in these dialects. Wagner, commenting on the wide phonetic radius of Irish short vowels, comments that

> free interchange of central vowels . . . all very close to the irrational "vowel" ə, is a common feature in Irish dialects, and is often the despair of the phonetician who tries to define them exactly (LASID I: xxii).

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[30]And similar typographical symbols.

[31]This sound does not occur in Teileann (GT: 72).

Nowhere is this more true than in the case of Donegal dialects in my own experience, and it is probable that Donegal dialects, with which Wagner was best acquainted, were to the forefront of his mind when he penned these words. Leaving aside for the moment the question as to which phoneme the phones [E ö ø ə] should be assigned in Donegal dialects, we now turn to Sommerfelt's phonemic analysis of the dialect of Torr (DT).

Sommerfelt (1965), based on Sommerfelt (1922) (a phonetic description of Torr in Gaoth Dobhair) is the fullest phonemic analysis which exists of a Donegal dialect to date. Sommerfelt (1965: 238) proposes the following 6V short vocalic system:

/i/	/u/
/e/	/o̤/
/ɑ/	/ɔ/

The following table illustrates the relation of phones to these phonemes:

Phonemes and corresponding allophones in DT	
Phonemes	Allophones
/i/	[i] [ï] [y]
/e/	[e] [è] [ɛ]
/ɑ/	[ɑ] [æ] [a]
/ɔ/	[ɔ] [o]
/o̤/	[o̤] [o]
/u/	[u] [U]

Table 2A.4

Note that Sommerfelt did not see fit to collapse the front-back distinction for mid and high vowels. A detailed analysis of the distribution of these front and mid vowels, reveals a similar, though not identical pattern to that described above for ICF. Nevertheless, the front-back distinction between high and mid vowels will be retained here for Donegal dialects in line with the system adopted for other Irish dialects.

Sommerfelt's phonemic description of the short vowel system of the dialect of Torr, although similar in structure to systems suggested by de Bhaldraithe (ICF) and Ó Cuív (IWM), differs from that of other Irish dialects in terms of phonemic inventory and incidence. Sommerfelt symbolises the low back (unround) vowel in Torr as /ɔ/ which represents a different range of phones to that suggested by the symbol [ɑ] (IWM: 18). Furthermore, DT /ɔ/ corresponds to /o/ in other Irish dialects, not to /a/. The

relationship of DT back vowels to the back vowels of other Irish dialects can be described as follows:

Ir /o/ ≈ DT /ɔ/, /o/
Ir /u/ ≈ DT /u/, /o/

Given the significant difference of the DT system in relation to other Irish dialects, the analysis of the back vowels in DT into three levels of height requires some comment. Sommerfelt (1922) notes the following phonetic qualities for the back vowels [ɔ], [o], [o̟], [u], [U]:

[ɔ] low-back-wide-unround[32]
[o] mid-back-narrow-round[33]
[o̟] low-in-mixed-narrow.[34]
[u] high-back-narrow-round. Lip-rounding is not very marked.
[U] high-back-broad-round.[35]

Sommerfelt (1965: 238) notes that /o̟/ has 'an allophone occurring in a few words after labials which is practically the short correspondence to *o:*'. Similarly, Sommerfelt (1922: 18) notes that 'the first part of it may be rounded after labials' and adds 'the effect is then very peculiar'; he gives *bog* [bo̟g] as an example. Later he notes that /ɔ/ 'has an allophone [o] in some words containing labials' (Sommerfelt 1965: 239). Sommerfelt (1922: 24) provides the examples: *bothóg, fothalán, bothalán, mothú*. From the phonetic descriptions given above, it is clear that the rounded allophone of /o̟/ is distinct, though similar to, the rounded allophone of /ɔ/; although both allophones appear to occupy the mid back position, there appears to be a slight difference in rounding, the rounded allophone of /ɔ/ being more rounded throughout its articulation.

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[32]Sweet (1906: 19-20) defines 'wide' as being the 'natural 'wide' shape [of the tongue] in which it is relaxed and flattened'.
[33]Sweet (1906: 19) defines 'narrow' as follows: 'In forming narrow vowels there is a feeling of tenseness in that part of the tongue where the sound is formed, the surface of the tongue being made more convex than its natural 'wide' shape'.
[34]Sweet (1906: 16) notes that 'in-mixed vowels are obtained by retracting the positions of the mixed vowels into the corresponding back positions'. Sweet (1906: 14) notes that 'mixed' describes vowels 'where the whole tongue is allowed to sink into its neutral flattened shape, in which neither back nor front articulation predominates'. The precise value of this 'disputed' vowel is discussed by Ó Dochartaigh (1981) who summarises with regard to the rounding of the vowel that 'the best compromise might be to ... take it as having neutral lip position' (p. 282).
[35]'Corresponding to the *u* in English put . . . but accompanied by less liprounding' (Sommerfelt 1922: 21). The term 'broad' is not defined and is not used by Sweet.

Sommerfelt (1922: 19), referring to reflexes of original //o//, notes that 'it is impossible to determine the repartition of ọ and ɔ with even approximate accuracy'. This is misleading since a close examination of the data from a number of Donegal monographs shows that it is, in fact, possible to set out the environments in which both phones occur (as reflexes of //o//). In DT, as described by Sommerfelt, [ɔ] occurs regularly before the segments /t k s x h r (R) r' t' ʃ l' (L')/; [ọ] regularly occurs before the segments /N n m b g d/. Both occur before /l L r/ and there is variation in some words between both phones before /x/, e.g. *a-nocht*. This distribution is largley true for most Donegal dialects as the following table illustrates.[36]

Environment	DD	TY	DT	GT	Evans	Ó Searc	Lucas
__ t	ɔ	--	--	ɔ	(ö)	--	ɔ
__ k	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ, ọ
__ s	ɔ	--	ɔ	ɔ	ɔ	ɔ	ɔ
__ x	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	(ɔ)
__ h	ɔ	--	ɔ	ɔ	ɔ	--	ɔ
__ r	ɔ	ɔ	ɔ, ọ	ɔ	ɔ, ọ	ɔ	ɔ
__R	ɔ	--	(ɔ)	ɔ	ɔ	--	--
__ l	ɔ	ɔ	ɔ, ọ	--	ɔ	ʌ	ɔ
__ r'	ɔ	--	ɔ	--	ɔ	ɔ	--
__ t'	ɔ	--	ɔ	--	--	--	ɔ
__ ʃ	ɔ	ɔ	ɔ	--	--	ɔ	ɔ
__ l'	ɔ	--	ɔ	--	ɔ, ọ	ɔ	ɔ
__ L'	--	--	ɔ	ọ	ö	--	ɔ
__ k'	--	--	--	--	--	ɔ	--
__ L	ọ	ọ	ɔ, ọ	ọ	ɔ, ọ	ʌ	ɔ, ọ
__ N	ọ	ọ	ọ	ọ	ö	ʌ	ọ
__ n	ọ	ọ	ọ	ọ	ö	ʌ	ọ
__ m	ọ	ọ	ọ	ọ	ö	ʌ	ọ
__ b	ọ	ọ	ọ	ọ	ö	ʌ	ọ
__ g	ọ	ọ	ọ	ọ, ɔ	ö	ʌ	ọ
__ d	ọ	ọ	ọ	ọ	ö	ʌ	ọ
__ ŋ	ọ	--	--	ọ	--	ʌ	ọ

Table 2A.5: Reflexes of //o// in Donegal dialects

A clear pattern emerges. Leaving aside the lateral and *r*- sounds, it appears that [ɔ] is regular before voiceless consonants and [ọ] before voiced consonants. The contrast between [ɔ] and [ọ] only occurs before certain lateral and *r*- sounds; otherwise there is complementary distribution between both the [ɔ] and [ọ] reflexes of original //o//. The repartition between [ọ] and [ɔ] may be described as follows:

//o// → [ọ] / __ N n m b g d
→ [ɔ] / __ t k s x h r (R) r' t' ʃ l' (L') (Donegal)

[36]In the following table Evans, Ó Searc and Lucas refer to Evans (1969), Ó Searcaigh (1925) and Lucas (1979) respectively.

Reflexes of //u// in Donegal dialects are usually [ọ], except in word final position. Since [ọ] occurs regularly as a reflex of //u// before voiceless consonants, the validity of the phonemic opposition between /ɔ/ and /ọ/ is unquestionable. Moreover, the opposition is inferred from the following minimal pairs:

> *cor/cur* 'burying' [kọr]: *corr* [kɔr] 'odd; sand-eel'; *gol* [ọ]: *scológ, scolb* [ɔ]; *gor* [ọ]: *gorm* [ɔ]; *poll* [ọ]: *folláin* [ɔ] Sommerfelt (1922).[37]

The distribution of /u/ is defective. [u] occurs (a) in monosyllables in absolute final position, e.g. *bruth, cruth, guth, inniu, dubh* and also in related derivatives of such words, e.g. *dubh-bhrón, duibh-bhreac, dubhlaidh, cruthú* (?); (b) in the enviornments g, k __ C' in which case it frequently alternates with [ọ] and/or [y] (Sommerfelt 1922: 21-2); (c) in the words **crumhóg* 'maggot' and **crumadh* 'measure of a fingerlength', which according to Sommerfelt, 'are probably forms due to the influence of southern dialects'. It is clear from Sommerfelt's comment that [u] is not the expected development in these cases. The form **crumhóg* can be explained as being a derivative of a non-diminutive form *crumh* where [u] would be expected.[38] Cf. *cruth, cruthú* above. Sommerfelt derives **crumadh* from Middle Irish *crumma*, which is not listed in DIL. This word does, however, occur as *cromadh* in Irish and Scottish Gaelic sources. See FGB and Dwelly s.v. *cromadh* where it is glossed as 'the length of the middle finger'. If **crumadh* derives from *cromadh* 'to bend', the change /o/ > /u/ represents an instance of what may be referred to as a homophonic lexical split.[39] Whatever its origin, this word represents the sole example of the occurence of [u] in a non-prepalatal position. The distribution of allophones of /u/ in DT may be summarised as follows:

/u/	→	[u] ~ [U]	/ __ #
	→	[u]	/ __ m, ŋ[40]
	→	[U] ~ [ọ], [y]	/ g,k __ C'

Sommerfelt (1965: 238) establishes the phonemic status of the opposition /u/~/ọ/ on the evidence of the minimal pair: *cromadh* 'to bend' [ọ]: **crumadh* [u] 'measure of a fingerlength' and also on the existence of near minimal pairs such as *drong* [ọ]

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[37]Sommerfelt (1965) provides no examples of minimal pairs. The most convincing pair is *cor/cur : corr*. It is worth noting that in the other pairs [ọ] appears to occur in monosyllabic words while [ɔ] occurs in disyllabic words.

[38]The form *cnum[h]* is attested. See DIL s.v. *cruim*.

[39]This phenomenon is widely attested in Gaelic dialects though little work has been done on the subject. Dillon (1953) merely scratches the surface.

[40]**Crumadh* and *rungsa* only examples.

(Sommerfelt 1922: 19): *rungsa* [u] (Sommerfelt 1965: 239). Clearly, the functional load of the oppostion /u/~/o̤/ is not great in this dialect. Nevertheless, Sommerfelt (1922, 1965) provides convincing evidence for a 6V system for a Donegal dialect,[41] although the number of minimal pairs for the contrast /o̤/~ /u/ is small. It is worth noting that the three-way contrast between back vowels in DT is paralleled in Scottish Gaelic dialects.

Sommerfelt did not see fit to posit a three-way contrast /i/~/e/~/ɛ/ for front vowels, despite the occurence of [e] and [è] before the segment /h/ in this dialect, see DT: 8-9. We note below a possible minimal pair *beathaigh* (pl) [e] ~ *beathaigh* (vb) [ɛ] for TY, although this pair may be objected to on the grounds that *beathaigh* (pl) is bimorphemic. Ó Baoill (1996) provides the following pair *leithead* /e/ ~ *leathan* /ɛ/ for some Donegal dialects, however. In the absence of minimal and near-minimal pairs in the Donegal sources used for the purposes of the present study, we do not recognise a mid front vowel opposition /e/~/ɛ/ for Donegal dialects in this thesis.

A 6V system is not the only vocalic system which has been put forward for Donegal dialects. Ó Dochartaigh (1972) (ÓD) and Hughes (1994, 1994a) (H) both suggest a traditional 5V system.[42]

i u
e o
a

The relation between the 6V and 5V systems may be represented by means of a simple diasystem as follows:

Somm, ÓD/H // i ≈ e ≈ a ≈ Somm ɔ ≈ Somm o ~ ʊ //
ÓD/H o ÓD/H u

It is clear that the differences between both systems depends on the assignment of the phones [o̤] and [u] to phonemic units. Sommerfelt, as we have seen, assigns both to separate phonemes. Ó Dochartaigh, on the other hand, assigns both to the same phoneme, without providing evidence or arguments for this interpretation.[43] Both

[41]If we ignore the possibility that the front-back high and mid contrasts may be collapsed.
[42]Ó Dochartaigh (1972) is based on the dialect of Ros Guill; we are not told which dialect area or areas. Hughes (1994, 1994a) is based on and we must assume that the description is intended to represent all Donegal dialects.
[43]This is to be implied in Ó Dochartaigh (1972: 56-7) although Ó Dochartaigh lists no examples of high rounded vowels occurring in monosyllables of the type *dubh, cruth*.

interpretations are defensible, although the assignment of [o̞] and [u] to the same phoneme requires some comment.

The assignment of the back vowels [o̞] and [u] to the same phoneme raises the problem of associating phonetically dissimilar phones with the same phoneme. [u] is a high back round vowel in all Donegal dialects. [o̞] on the other hand is generally described as a low-mid to mid unround vowel (Quiggin 1906: 23; Sommerfelt 1922: 18). Ó Dochartaigh (1981: 282) adds that his own auditory impression of this segment 'would tend to place it . . . ranging from a centralised low-mid to centralised high-mid back position'. He adds that

> the concensus . . . [of previous descriptions] would appear to indicate that the vowel is not produced with any obvious degree of either lip-rounding or lip-spreading and the best compromise might be to accept the earlier usage of Sweet and take it as having neutral lip position. (Ó Dochartaigh 1981: ibid)

Objections, on the grounds of phonetic similarity, to the assignment of [o̞] and [u] to the same phoneme are not sufficient, since, as we have already noted, phonetic similarity is not a necessary condition for the establishment of allophonic status. Furthermore, the occurrence of [u] in absolute final position, e.g. *dubh, cruth* cannot be explained in contactual co-articulatory terms unless we posit the existence of final /w/ in words like *dubh, cruth.*[44] On the other hand, even if we don't posit the existence of word final /w/ in words like *dubh, cruth*, the occurrence of [u] in word final position need not be accounted for in articulatory terms. Although we lack information on native speakers' intuition with regard to the back vowel oppositions in Donegal dialects, we have seen that Donegal vowels can be validly described in terms of 5V or 6V systems, depending on the dialect in question. Before we proceed, it is worth noting, however, that all Donegal 5V systems can be interpreted as 6V systems. Based on the principle of phonetic similarity, it is possible to assign [u] phones to a separate, albeit marginal, /u/ phoneme. In the absence of minimal pairs, the choice of analysis is, in some cases, partially a matter of theoretical preference.

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[44]Final [uɣ̯] sequences may be analysed phonologically as either /u/ or /uw/(/ow/). There are valid arguments for each. In favour of the former, i.e. /u/, we may note (a) devoicing or glottalisation is common after short vowels generally in Donegal; (b) when endings or morphemes are added to words with final [uɣ̯], the [ɣ̯] disappears intervocalically, e.g. *sruth* [sruw] but *sruthán* [sruhan] DD: 19; DT: 20 and also preconsonantally, e.g. *cru* [uw]~*cru capaill* [u], DD: 77. In favour of the latter, /uw/, we may note (a) the morpho-phonological variation /w/~/v'/ in *dubh~duibh(e)* /v'/; *cru~cruibh* /v'/ DD: 113; (b) if [u] and [o̞] are analysed as allophones of the same phoneme, the occurrence of [uw] sequences can be explained as a contactual co-articulatory phenomenon if we posit the existence of /w/ at the end of such syllables.

Since Quiggin (1906) and Hamilton (1974) have been chosen as the representative dialects for Donegal in the present study, I would now like to establish how, particularly in the light of the above discussion, we might best describe the short vowel systems of these dialects.

DD, Quiggin (1906)

The assignment of Quiggin's phones to phonemic units is straight forward in most cases; the only point where there is likely to be disagreement is, as discussed above, the assignment of the phones [o̤] and [U]. The following table illustrates the assignment of phones to phonemes in the unproblematical cases:

Phonemes and corresponding allophones in DD	
Phonemes	Allophones
/i/	[i] [ɨ] [y]
/e/	[ɛ] [e]
/a/	[ɑ] [æ]
/ɔ/	[ɔ] [o]

Table 2A.6

Note that the contrast /ɔ/~/o̤/ is established for DD by the minimal pairs: *corr* /ɔ/ 'odd; crane; sand-eel': *corr* /o̤/ 'edge', *cor, cur* 'putting'.

The distribution of [U] and [o̤] phones may be set out as follows:

[U]	/ __ #[45]	*dubh, guth, cruth*
[U]	/ k __ ʃ	*cuiscreach, cuisle, cuisneach*
[U]	/ # __ x	*uchairt*[46]
[U] ~ [o̤]	/ C __ C	*muc, mullach, gugán, dtugfaí, buntáiste, *cumplásc*
([U] ~ [o̤]	/ g, C(') __ C/C'+	*goidtear, gaibhte, threabhtí*[47]
[U] ~ [o̤]	/ C' __ x	*fliuch*
[o̤]	/ __ C	otherwise, e.g. *poll, bonn, domlas, bog*

I can find no minimal pairs for the contrast [U]~[o̤] in DD, although [o̤] *ocht, ucht* ~ [u] *uchairt* provides one near-minimal pair. Leaving aside fluctuation between

[45] Or / __ w depending on analysis.

[46] *Uchairt* [U] 'wallow' here is irregular for //u// / __ x. It probably derives from //u:// , cf. FGB s.v. *uthairt, úthairt, únfairt*. Cf. TY s.v. *úthairt*.

[47] All bimorphemic forms.

[U] ~ [o̟], both phones appear to be in complementary distribution. The occurrence of [U] can be said to be predicted by the presence of labial or velar segments. If it were not for the near minimal pair *ocht/ucht: uchairt*, it would be a matter of theoretical preference whether a 5V or 6V system were adopted in this case. We are, however, in agreement with Sommerfelt, inclined to opt for a 6V system in order to represent the short vowel system of DD. Differentiating between /u/ and /o/ has, as we shall see, the added advantage of illustrating quite clearly certain aspects of the development of //u//, see chapter 6.

This provides the following rectangular 6V short vowel system for DD:

/i/	/u/
/e/	/o/
/a/	/ɔ/

TY

The material presented in TY highlights the difficulties which an unanalysed corpus of phonetic raw data presents to the phonemicist. Based on apparent minimal pairs alone, the TY material suggests a 10V short vowel system as follows:

/i/			/u/
	/ï/	/ö/	
/e/			/o/ (=[o̟])
/ɛ/			/ɔ/
/a/			/ɑ/

Contrasting pairs include the following:

[i]	*fírinne*[48]	~	[ï]	*fireann*
[e]	*beathaigh* 'horses'[49]	~	[ɛ]	*beathaigh* 'feeds'
[ɛ]	*urchóid*	~	[a]	*urchóideach*
[a]	*brothladh* 'lights up'	~	[ɑ]	*brathladh* 'a type of warning'
[a]	*coraidheacht*	~	[ɑ]	*coraidh* (< *coirthe*)

[48]Stressed, originally long vowels, are frequently shortened in Donegal dialects. This may be a relatively late phenomenon in Donegal dialects. It was not common in Mín an Bhainne when Quiggin studied it at the beginning of the century. See DD: 145. Sommerfelt on the other hand did notice this in Torr. See DT: 131-2. This shortening is particularly common (a) before /h/ and in some cases /x/, /x'/; (b) in relatively unstressed positions; (c) in polysyllabic words. For a discussion of this phenomenon, see Stockman (1986), Ó Baoill (1996a: 2-5).

[49]*Beathaigh* 'horses' may be objected to on the grounds that it is bimorphemic. However, [ɛ] also occurs in *beatha* 'life'.

[ɔ]	*coradh*; *dall* 'cateract'	~	[ɑ]	*coraidh* (< *coirthe*); *dall* 'blind'
[ɔ]	*cor*; *port* 'tune'	~	[o̤]	*curtha*; *port* 'harbour'
[o̤]	*turas*	~	[ö]	*turadh*
[o̤]~[ɔ]	*bothóg*	~	[u][50]	*buachailleacht*

Without recourse to native speakers of the dialect of Torr, it impossible to know if the data presented above for a 10V system is reliable. Hamilton does not provide a discussion of the phonemic status of the short vowels, and it is difficult, based on a limited corpus, like that presented in TY, to make reliable judgements about the phonemic status of these vowels. Furthermore, there appears to be much vocalic variation in individual cases. In the absence of further corroborative information on the dialect of TY, I have decided to describe the dialect of TY in terms of a 6V system similar to that presented above for DT and DD.[51] This means ignoring the pairs which imply a contrast between: [i]~[ï], [e]~[ɛ], [a]~[ɑ], [o̤]~[ö]. A preliminary examination of the environments in which each of these pairs occurs does not shed much light on the historical development of //i//, //e//, //a//, //o// respectively. The occurrence of individual vowels in any of these pairs is to a large degree unpredictable as far as I can make out, with the exception of some instances of vowel shortening which is common before /x/, /h/.

In support of a 10V system, we may note that Ó Baoill (1996) posits a 11V short vowel system for some Donegal dialects.[52] Elaborate vowels systems in Donegal dialects are partially to be explained as being due to two processes, namely the shortening of long vowels and the centralisation of short vowels. Long vowels, when shortened, result in vowels which are more tense than reflexes of original short vowels. This gives rise to contrastive pairs such as: [i] < //i:// *fírinne* ~ [ï] < //i// *fireann* (TY),

I have assigned the phones described in TY to the following phonemes:

---

[50][u] reduced from /uə/, notably before /x/, cf. *uchairt* above.

[51]TY has an additional marginal phoneme which can be described as high back unrounded. See TY: 131.

[52]Ó Baoill (1996) puts forward three different short vowel systems for Donegal dialects, 5V, 6V and 11V.

/i/	[i], [I], [ɪ]
/e/	[e], [ɛ]
/a/	[a], [ɑ]
/ɔ/	[ɔ], [o]
/o/	[o̟], [ö], [ø]
/u/	[u]
(/ɯ/)	[ʎ][53]

We have seen that the vocalic systems of Donegal dialects may not be homogeneous, thus providing evidence for the operation of different systems within Donegal during the course of the present century. From the point of view of back contrasts, the 5V system reflects a more traditional Irish type of vowel system; the 6V system reflects a more Scottish type of system.[54] In conclusion, a 6V system has been chosen to represent DD and TY in the present study.

Long vowels

Four different long vowel systems have been put forward for Irish dialects, namely, 5V, 6V, 7V, 8V.

5V

This is by far the most common system which has been suggested for Irish dialects, see Skerrett 1967, Bliss 1972, Ó Siadhail 1989, Holmer 1962, Hickey 1986, IR, IT, IE, Ó Dochartaigh 1972, Ó Sé 1982, Hughes 1994. It is usually represented by the following traditional triangular system:

/i:/	/u:/
/e:/	/o:/
/a:/	

6V

A 6V rectangular system has been suggested for Connacht dialects (Williams 1976) and for Munster dialects (IWM). The difference between these 5V and 6V systems is the existence of an extra low vowel. The correspondences between both systems may be represented by the following diasystem:

---

[53]Usually only as a reflex of //ə:// before //h//.

[54]Further research establishing the number and geographical distribution of Donegal vowel systems would enable us to draw conclusions about the relationship between the vowel systems of Ulster and ScG dialects.

6V, 5V //i: ≈ e: ≈ o: ≈ u: ≈ $\frac{\text{6V a: ~ ɑ:}}{\text{5V a:}}$ //

The distribution of the allophones of /a:/ and /ɑ:/ in IWM may be described as follows:

/a:/	→ [a:]1	/ C' __ #
		/ C' __ C'
		/ C' __ C
/ɑ:/	→ [ɑ:]1	/ # __ C
		/ C __ #
		/ C __ C
	→ [ɑ:]2	/ # __ C'
		/ C __ C'
		/ C' __ C

These allophones may be plotted as follows:

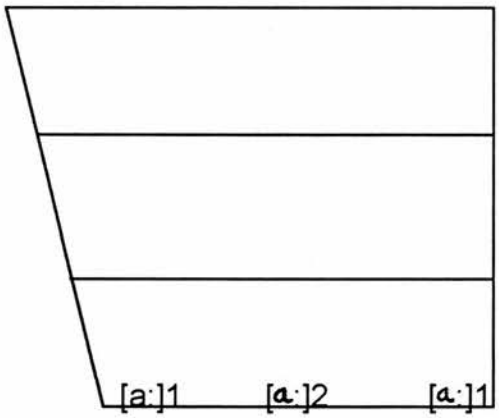

Figure 2A.4: Long low vowels in IWM

It is clear that there would be complementary distribution between [a:] and [ɑ:] if it were not for the occurrence of both in the environment C' __ C. Hamp (1953: 521) notes that 'it is tempting to look for complementary distribution in /a/ and /ɑ/' but concludes: 'that this is not possible is . . . demonstrated by pairs such as /m'a:n/ *meadhon*: /s'ɑ:n/ *Seaan'*.[55] Hamp, in his conclusion, accepts the macro-environment

[55]For an account of the geographical distribution of [a:] and [ɑ:] in Munster dialects, see Ua Súilleabháin (1994: 483).

C' __ C as sufficient to establish the phonemic contrast between /a:/~/ɑ:/. The pair which he quotes is not, however, a true minimal pair. A more detailed investigation of the distribution of the phones [a:] and [ɑ:] based on micro environments of the shape C' __ C shows that both vowels are in fact in complementary distribution:

[a:]1 b', f', g' __ r
m' __ d
m' __ n

[ɑ:]2 l', ʃ __ n
n' __ l

There is good evidence to suggest that the occurrence of the phones [a:]1 and [ɑ:]2 is dependent upon environment. In this case, the preceding, rather than the following consonant, appears to be the significant factor in the occurrence of each. The occurrence of [a:] appears to be common following palatalised labials and palatalised velars. It also appears to be common before /r/. It is well known that labials and velars form a natural class which may be classified for our purposes as [+peripheral], see Hawkins (1984: 93).[56] The distribution of [a:] and [ɑ:] may be stated solely in terms of the feature [+peripheral]:

[a:] / C' __ C, C' = [+peripheral]
[ɑ:] / C' __ C, C' = [–peripheral]

If a feature of [+peripheral] is accepted for this dialect, it implies that palatalised labials and palatalised velars may be acoustically more 'front' than other palatalised consonants in the dialect of IWM at least. We have already noted that there is some evidence for this in the case of palatalised labials in ICF. Our discussion of the distribution of the long low vowels in IWM highlights the importance and applicability of a minute analysis of phone distribution in terms of micro-phonological environment.

The complementary distribution and the phonetic similarity argues quite strongly for the analysis of [a:] and [ɑ:] in IWM as allophones of the same phoneme. This reduces the proposed 6V system for IWM to a 5V system. Although Williams (1976: 306) provides no evidence for his analysis of a 6V system for Connacht dialects, it is

[56]In English the peripheral consonants are variously classified as [+grave] or [–coronal]. See Hawkins (1984: 85, 93).

certain that his 6V system may also be reduced to a 5V system using similar arguments to those advanced below for ICF.

7V

De Bhaldraithe proposes the following 7V system for ICF:

/i:/		/u:/
/e:/		/o:/
/æ:/		
	/a:/	/ɑ:/

We have already noted that the vowels [æ:] and [a:] belong phonologically to the short vowel phoneme /a/. This reduces de Bhaldraithe's 7V system to a 5V system.

Donegal

Sommerfelt (1965) proposes the following 8V system for Torr:

/i:/	/ʏ:/	/u:/
/e:/	/ʌ:/	/o:/
/ɑ:/		/ɔ:/

Sommerfelt (1965: 238) notes that 'the functional load of /o:/ is very low: 'it occurs mainly in connection with labials — whereas that of /ɔ:/ is large'. He goes on to say:

> It must be regarded as a separate phoneme as it may occur also in other positions e.g. /Lo:n/ "store, provision", and /ɔ:/ may appear after labials, e.g. /pɔ:sw/ (sic) "to marry".

Sommerfelt's arguments, as they stand, are not convincing for establishing the phonemic status of the opposition /ɔ:/: /o:/ since they rely on the use of macro-environments. His comments on the occurrence of [o:] could be refined and expanded. Sommerfelt neglected to say that [o:] occurs mainly in connection with nasal consonants or as a nasal vowel [õ:]. See Sommerfelt (1922: 24) for details. As far as 'other positions' are concerned, we may add the examples *tógáil* /o:/ and *go leor* /o:/. It is odd that Sommerfelt did not quote any minimal pairs in support of the

opposition /ɔ:/: /o:/. One such pair does in fact exist: *cóir* /ɔ:/ 'favourable wind': *cabhair* /o:/ 'help' which establishes the contrast.[57]

It is important to note that Sommerfelt did not suggest a phonemic opposition between the front mid vowels [e:] and [ɛ:]. Leaving aside the fact that DT does not have a phonemic oppositon between two mid vowels, the system proposed by Sommerfelt for DT is very similar, as we shall see, to the vocalic systems of Scottish Gaelic. Ó Baoill (1996) notes instances of a contrast between /e:/~/ɛ:/ in some Donegal dialects: /e:/ *bréan, déanach, méile, sé, séan* ~ /ɛ:/ *breá, déan, méileach, seá, Seán.*

Not all accounts of Donegal dialects have posited a 8V system for the long vowels. The high and mid unrounded vowels [ɻ:] and [ʌ:] described by Sommerfelt (1922: 22-4) correspond to front vowels in other dialects (generally transcribed as [I:]/[y:] and [E:] respectively).[58] Where such fronted varieties occur, it is possible to assign these vowels to the phonemes /i:/ and /e:/ respectively. There is some evidence to suggest that [ɻ:] and [ʌ:] represent the older Donegal pronunciations, and that [i:] and [e:] represent later substitutions for these, see DD: 29. This is the analysis adopted in Ó Dochartaigh (1972: 59-60). Ó Dochartaigh (1972: 61-2) also assigns [ɔ:] and [o:] to the same /o:/ phoneme, thus providing a 5V system for the long vowels of Ros Guill.

Since DD and TY have been chosen as the representative dialects for Donegal in the present study, I would now like to establish how we might best describe the long vowel system of these dialects. The assignment of Quiggin's phones to phonemic units is relatively straight forward in most cases.

/i:/	[i:]
/e:/	[ɛ:], [ɛə], [e:][59]
/a:/	[ɑ:]
/ɤ:/	[ɵ̈:][60]
/ɯ:/	[ɻ:]
/o:/	[o:], [õ:]
/ɔ:/	[ɔ:]
/u:/	[u:]

[57]In some Donegal dialects there is a contrast between /o:/ *leabhar* and /ɔ:/ *leor*, but this does not apply to DT. Cf. TY below.

[58]Sommerfelt (1965: 22-4) notes this for Torr itself.

[59]Both [ɛ:] and [e:] are in complementary distribution. I have noted no minimal pairs other than *tréan* [ɛə] 'strong': 'train' [e:] which is marginal and perhaps not sufficient to establish the phonemic opposition of [ɛ:] and [e:].

[60]Quiggin notes that the younger people substitute /e:/ for /ɤ:/, DD: 29.

The distribution of [ɔ:] and [o:] in DD is similar to that in Sommerfelt (1922). See DD: 15-19 for details. It is clear from the following lists that the [ɔ:] and [o:] are to a large extent in complementary distribution. The minimal pairs *cóir* 'proper' /ɔ:/: *cabhair* /o:/ 'relief'; *gabhal* 'groin' ~ *gabhála* /ɔ:/[61] 'yeast' (GEN) establish the opposition, however.

Distribution of [o:], [õ:], [ɔ:] in DD		
[o:]	[õ:]	[ɔ:]
m __ #	kr __ #	kr, s, b, k', d' __ #
k __ r'		k __ r'
g __ l	k __ l	g, d, sm, d'r', ʃ, f' __ l
# __ N'		# __ g, l, r, k, rd, rN, n
f' __ s	N __ s	p __ s
br, L, sr, s, L' __ n	r, d, k __ n	
k __ g		r, p __ g
m, t __ n'	k __ r	f __ d
L' __ r		L' __ r ([o:]~[ɔ:])
		d, gl, t, d' __ r
r __ rt		t, N, sk, k __ rh
		d __ rt
k __ rL'		sk, d __ rN
t __ rt'	f, m' __ r'	
ʃ __ k		t __ rN'
		tr, st, p __ k
		k __ t
		sr __ f
		f __ L'
		sk, kr __ g'
		pl __ d'
		sL __ t'

Table 2A.7

This establishes an 8V long vowel system for DD similar to that which Sommerfelt put forward for DT. Our system differs from that of Sommerfelt's only in choice of symbols:

/i:/	/ɯ:/	/u:/
/e:/	/ɤ:/	/o:/
/a:/		/ɔ:/

[61] *gabháltas* 'farm' [gɔ:Ltəs] can be analysed as /gɔ:ltəs/ phonemically.

The distribution of [ɔ:] and [o:] in TY is similar to that in DD. The contrast between [ɔ:] and [o:] is established by the pairs: *leor* /ɔ:/~*leabhar* /o:/; *corna, corda, cóir,* /ɔ:/~*cubhar* /o:/. The pair *meadh* (sic) [ɑ:] 'scales'~*meadh* [a:] 'weigh (vb)' might seem to argue for a phonemic contrast between /ɑ:/ and /a:/ in TY. However, *meadha* (recte) can be interpreted as bimorphemic containing {*meadh*} + {pl} and as such must be discounted for the purpose of phonemic analysis. These examples may in fact be unreliable. Compare *ceardcha* which appears as [ɑ:] (TY: 119) but as [a:] (TY: 251). TY, like DD, has a high back unrounded phoneme /ɯ:/ (TY: 131). The opposition is established by the pair /ɯ:/ *aois* ~ /i:/ *ísleán*. However, TY differs from DD in not having a mid back unrounded vowel phoneme /ɤ:/. In fact DD /ɤ:/ corresponds to TY /e:/ [E:] (TY: 130-1). We have noted that the /e:/ represents a later development of /ɤ:/ in Donegal dialects. This gives the following 7V system for TY:

/i:/	/ɯ:/	/u:/
/e:/		/o:/
/a:/		/ɔ:/

Our discussion of long vowels in Donegal dialects has illustrated that the system of long vowels is not homogeneous in Donegal. Donegal has at least 5 different systems, ranging from 5V to 9V. Ó Baoill (1996) posits 5V, 6V, 9V long vowel systems for some Donegal dialects as follows. We have noted a 7V system for TY and an 8V system for DD. These systems may be illustrated as follows:

5V

/i:/		/u:/
/e:/		/ɔ:/
	/ɑ:/	

6V

/i:/		/u:/
/e:/		/o:/
/ɛ:/		/ɔ:/

7V

/i:/	/ɯ:/	/u:/
/e:/		/o:/
/a:/		/ɔ:/

8V

/i:/	/ɯ:/	/u:/
/e:/	/ɤ:/	/o:/
/ɛ:/		/ɔ:/

9V

/i:/	/ɯ:/	/u:/
/e:/	/ɤ:/	/o:/
/ɛ:/		/ɔ:/
	/ɑ:/	

For the purpose of the present study, all Irish dialects, with the exception of Donegal dialects, will be represented by a 5V system. Donegal dialects will be represented by 7V (TY) and 8V (DD) systems. We will see that the Donegal systems are very similar in structure to the long vowel systems of Scottish Gaelic. The comments made earlier about the occurrence of 5V and 6V vowel systems apply also to the long vowels (Crothers 1978). 9V systems, containing two 'interior' vowels, are the most common systems which occur outside the range 3V–7V; they account for less than 5% of Crother's total of 209 languages (Crothers 1978: 104-5).

Diphthongs

We have made no attempt to standardise the symbols used in the monographs. We have preferred to maintain the original symbols in order to facilitate comparison with the monograph descriptions.

Most accounts of Munster dialects propose a system of 7 diphthongs, consisiting of three down-gliding diphthongs /iə ia uə/ and four up-gliding diphthongs /əi ai au ou/ (IWM /ou/ = IR /əu/).[62] Most Connacht dialects are desrcribed as having four diphthongs /iə uə əi əu/ (IT, IE). ICF uses the symbol /ai/ instead of /əi/ and also proposes a marginal phoneme /ei/. However, since [ei] only occurs following /b'/, most notably in future forms of the verb *bí*, it is tempting to classify it as an allophone of /ai/. However, /ai/ occurs following /m'/ in *meadhair*. This suggests that the best interpretation of /ei/ in future form of the verb *bí* in ICF is as bimorphemic sequences consisting of the future stem {/b'e/} followed by a verbal ending, e.g. /b'ei/ *beidh* (FUT) can be analysed as {b'e}+{FUT}. However, /ei/ in *beithíoch* establishes the marginal status of the /ei/ phoneme in ICF. Donegal dialects have been described as having either two or three diphthongal systems. Sommerfelt (1965: 240) lists /iɑ/, /uɑ/ and /ɑu/ as the phonemic diphthongs for Torr. Ó Dochartaigh (1972: 63-4) only gives two /ia/ and /ua/, apparently analysing occurrences of [au] as sequences of /a/ + /w/.[63]

The phonemic interpretation of *i*- and *u*-gliding diphthongs in Donegal dialects is problematical. In most cases the occurrence of such diphthongs appears to be conditioned by phonological environment, with *i*-gliding diphthongs frequently, if not

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[62]Ó Cuív (IWM: 30) notes, however, that 'among the younger speakers in general the two diphthongs /au/ and /ou/ have tended to fall together'.

[63]Cf. /grawər/ 'dry turf mould' (Ó Dochartaigh 1972: 56).

always, occurring before palatalised consonants, particularly before /x'/, and *u*-gliding diphthongs usually occurring before [w].[64] In such instances [i] and [u] can be taken as non-contrastive anticipatory features of the preceding vocalic element. Sommerfelt (1922: 29-31, 145-53), although a pre-phonemic study, seems to imply this in his discussion of diphthongs. This follows from the fact that the *i*- and *u*-gliding diphthongs are not discussed under the heading 'Diphthongs' (DT: 29-30) but rather are discussed under the headings of 'New diphthongs' (TY: 146) and 'Diphthongs before palatal consonants and before *w*' (DT: 149-153). This treatment of the diphthongs implies that in 1922 Sommerfelt interpreted *i*- and *u*-gliding diphthongs as conditioned variants of short and long monophthongs, and of diphthongs occurring before palatal consonants and before [w]. Some thirty years later when he came to analyse the Torr data phonemically, Sommerfelt notes:

> One might be in doubt about the interpretation of the phonetic diphthongs [ei], [ai], [ɔi] and [au]. The first three occur only before [h'], [h], sometimes alternating with [x'], e.g. [dreihə d] "bridge", [aihIrə] "short cut", [klɔix'], dat. of [klɔx] "stone", [bɔihɑx] "byre", but [bɔhɔg] "hut". There exist at least some cases in which /e/ is found before /x'/: /L'ex'Id'/ (phonetically: [L'èhəd'] or [L'èh'id'], I think *ei* can be regarded as an allophone of /e/ before /x'/. The dipthong /ɑu/, however, exists also outside the position before /v/, e.g. /kausə/ "causeway", /bautə/ "bout, turn", /fautax/ "rotten"' (Sommerfelt 1965: 240).

This rather succinct treatment of the *i*- and *u*-gliding dipthongs is unsatisfactory in a number of ways. For instance, it is unclear whether or not Sommerfelt also regarded [ai] and [ɔi] as allophones of /a/ and /ɔ/ respectively? The existence of [ai] in *maighistir* (DT: 44), however, would seem to argue for the phonemic status, marginal perhaps, of the diphthong /ai/. The existence of this diphthong raises questions about the phonemic interpretation of [ai] before [h] and [x']. The interpretation of such sequences as allophones of /a/ or as phonemic diphthongs seems a matter of theoretical preference. Furthermore, it is uncertain if Sommerfelt interpreted phonetic [auw] sequences as /auw/ or /aw/ phonemically. He tactfully avoids these questions and none of the phonemic transcriptions in Sommerfelt (1965) provides any instances which would clarify the matter.[65]

The phonemic status of the diphthong /au/ may be objected to for a number of reasons. The only examples of this diphthong which Sommerfelt (1965) quotes occur in the English loanwords **cabhsa, *babhta, *fabhtach*.[66] However, these words are

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[64]I write [w] rather than /w/ since the phonemic status of [w] in non-initial positions has yet to be ascertained.

[65]*Námhaid* does occur as /ɑ nãwəd'/ 'his enemy' (sic, /ã:/ recte) (Sommerfelt 1965: 252) for phonetic [nã:wid'], cf. DT: 57.

[66]Cf. DD which has [au] in *cabhsa* but [əu] in **fabhtach*.

transcribed as [əu], not [au] in Sommerfelt (1922: 97).[67] It could be argued on the basis of the phonetic quality of the diphthong [əu] and its occurrence in a small number of English loanwords that the phoneme /əu/ exists only marginally in this dialect.[68] Leaving aside the phonetic quality of the initial elements in the diphthongs [əu] and [auw], one wonders if there is any phonetic difference between the final elements [u] and [uw] in each respectively. Certainly, Sommerfelt (1922: 57) does not imply that there is any friction involved in the production of [uw]. It is not clear therefore whether or not there is any phonetic difference between [u] and [uw] in this dialect. Sommerfelt's transcription in the case of [uw] sequences may have been affected by historical factors. He only transcribes vocalic sequences as [uw] in words which contain original //v//.[69] Sommerfelt's [uw] could adequately be transcribed phonemically as /u/. Ultimately, it is a matter for theoretical speculation whether the diphthong [au] is to be interpreted phonologically as a diphthong /au/ or as a sequence of /a/ + /w/. Both are equally valid interpretations of the phonetic data. If we consider the phonological system as a whole, and in particular, phonemic patterning, the analysis of [au(w)] diphthongs as /aw/ sequences would be supported by the analysis of [V:w] sequences as /V:w/ e.g. *námhaid* [Nã:wid'] as /Nã:wid'/. The analysis of long vowel sequences + [w] as /V:w/ is more economical than positing a number of long *u*-gliding phonemic dipthongs.[70] Similarly, it is more economical to describe sequences of [Vuw] as /Vw/ in the case of short vowels + [w]. For the purposes of the present study, however, sequences of [auw] in Donegal dialects will be treated as members of the diphthong /au/. This has the advantage of reflecting the phonetic quality of historical sequences //av//, //aṽ//. We note that Ó Baoill (1996a: 6-7) interprets [Vw] sequences as phonemeic sequences when V is a long vowel or a diphthong, but as u-gliding diphthongs when V is a short vowel. Hughes (1994: 628), on the other hand, appears to analyse [Vi] and [Vu(w?)] sequences as members of up-gliding diphthongs when V is long or short.[71] The remaining part of this section deals with the phonemic interpretation of the phonetic diphthongs in DD and TY.

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[67]*Cabhsa* is not cited in DT.

[68]The occurrence of [au] in *fabhra* (DT: 152) rules out the possibilty of [əu] being interpreted as an allophone of /au/ following the labials /f/, /b/.

[69]Leaving aside the loanword *dannsa/damhsa* which is also attested as *damhsa* in the historical record. Cf also /davsə/ (IT: 29).

[70]The economy argument does not really apply in the case of [au(w)] since [a] is the only short vowel which occurs with [u].

[71]Since no statement to the contrary occurs in Hughes (1994a), we must assume that this was the intended phonemic transcription.

DD

Quiggin (DD: 55-64) lists and describes some 19 diphthongs in the Mín an Bhainne dialect which may be reduced to a set of four dipthongs: /au/, /əi/, /uə/, /iə/ with a further three marginal dipthongs /ai/, /əu/, /əɯ/. Quiggin's set of phonetic diphthongs can be divided into two groups: (A) true dipthongs and (B) sequences of monophthongs + glide or semi-vowel. In the following I have interpreted [ai] in the words *daingean, doimhne* (comparative of *domhain*), *maighistir* as instances of a marginal /ai/ phoneme. I have, on the other hand, interpreted instances of [ai] before [h] and [x'] as allophones of the phoneme /a/.[72] The assignment of phones to phonemic units is illustrated below:

(A) True diphthongs

[ɑu], [ɑuw]	/au/
[əi]	/əi/
[uə], [ui]	/uə/
[iə], [iu]	/iə/
[yə]	/iə/
[ɑi]	/ai/ (marginal)
[əu]	/əu/ (marginal)[73]
[əʏ]	/əɯ/ (marginal)

(B) Sequences

[ɑi] / __ x'	/a/
[ɑ:i] / __ x'	/a:/
[ɑ:u]	/a:w/
[ɔi] / __ x'	/ɔ/
[ɔ:i] / __ x'	/ɔ:/
[ɛi] / __ C'	/e:/
[ɛu]	/e:w/ or /au/?
[ɛə] / __ C	/e:/
[ei] / __ C'	/e:/
[e:i]	/e:j/

Hamilton (TY: 132-35) lists 31 diphthongs for Tory Island which may be reduced to a set of three diphthongs: /au/, /ai/, /uə/, /iə/ with a further marginal diphthong /əɯ/. Hamilton's set of phonetic diphthongs may be divided into two groups: (A) true diphthongs and (B) sequences of monophthongs + glide or semi-vowel. Note in the

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[72]Hughes (1994: 628) analyses these as phonemic diphthongs.

[73]This diphthong only occurs in the loanword **fabhtach* and in *modhamhla*, comparative form of *modhamhail* (DD: 63).

following that I have interpreted instances of [ai] before [h] and [x'] as allophones of the phoneme /a/:

(A) True Diphthongs

[au], [ɑu], [ɔu], [ɑo]	/au/
[ɑi] (~[əi])[74]	/əi/
[uə], [u:ə], [uɑ], [u:ɑ], [ui]	/uə/
[iə], [i:ə], [iɑ], [i:ɑ]	/iə/
[əʎ]	/əɯ/

(B) Sequences

[ɑ:u]	/a:w/
[ɑi] / __ x'	/a/
[ɛi]	/e:/
[ɔ:u]	/ɔ:w/
[ɔi] / __ x'	/ɔ/
[ɔ:i]	/ɔ:j/
[o:i]	/o:j/
[o:u]	/o:w/
[u:i]	/u:j/
[ɛ:u]	/e:w/
[e:u]	/e:w/
[ɛ:ə] / __ C	/e:/
[e:ə] / __ C	/e:/
[ɛ:i]	/e:j/
[e:i]	/e:j/
[i:u]	/i:w/
[ɑ:i] / __ x'	/a:/

To sum up then, all Irish dialects have the diphthongs /iə uə au əi/, although the occurrence of the latter is somewhat restricted in Donegal dialects.[75] In some Munster dialects there is a further opposition between /au/ and /ou/ (= /əu/), between /ai/ and /əi/ and between /iə/ and /ia/. The correspondences between the various diphthongs which occur in Irish dialects may be described by means of the following diasystem:

$$\text{M, C, U } // \text{ iə} \approx \text{uə} \approx \underset{\text{C,U au}}{\underline{\text{M au ~ ou (=əu)}}} \approx \underset{\text{C,U əi (= ai)}}{\underline{\text{M əi ~ ai}}} \approx \text{M ia } //[76]$$

[74]'This sound [i.e. [ɑi]] is often replaced by [əi].' TY: 133.

[75]The latter /əi/ being represented by /ai/ in ICF and TY.

[76]Munster /ia/ corresponds to /e:/ in Connacht and Ulster dialects.

Section B
The Synchronic Vowel Phonology of ScG

The system of oral (monophthongal) vowels is remarkably stable in ScG dialects, see Ternes (1983: 102). The majority of Scottish Gaelic dialects can be described in terms of a triangular system consisting of nine vowels, both short and long, with two 'internal' vowels (Ternes 1989: 145-6, Watson 1994: 670):[77]

/i(:)/	/ɯ(:)/	/u(:)/
/e(:)/	/ɤ(:)/	/o(:)/
/ɛ(:)/		/ɔ(:)/
	/a(:)/	

Although such a 9V system is not well attested in the world's languages, it does account for the majority of vowel systems which occur outwith the range of 3V–7V. Languages possessing this system account for 7-11 of Crothers' (1978) sample, i.e. between 3 and 5%. It is found in some Indian/Tibetan languages, the closest to ScG apparently being a Cham language (Crothers 1978: 142).

There are some minor divergences from this system, the main one being a system which contains only one back unrounded vowel phoneme /ɤ(:)/ which is characteristic of some peripheral dialects, e.g. ESG. ESG provides a further minor divergence from the usual pattern since it does not have a long front low mid vowel /ɛ:/ (ESG: 58). This gives ESG a somewhat irregular long vowel system:

/i:/		/u:/
/e:/	/ɤ:/	/o:/
/a:/		/ɔ:/

Some Argyllshire dialects have front rounded vowels rather than back unrounded ones, e.g. GA, GK, a point overlooked by Ternes (1983, 1989). Holmer transcribes these rounded vowels with the symbols /ʎ(:)/ and /o̤(:)/ (GK), /ö(:)/ (GA) respectively. This minor difference does not upset the overall symmetry of the ScG vowel phonemes which could in any case be represented by the symbols /ɨ(:)/ and /ə(:)/ (or possibly /ɯ(:)/ and /ɤ(:)/. However, the IPA symbols /y(:)/ and /ɸ(:)/ will be used throughout the present study for Holmer's original /ʎ(:)/ and /o̤(:)/ (GK), /ö/ (GA).

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[77]I have adopted the IPA symbols /ɯ/ and /ɤ/ for Borgstrøm's /ʎ/ and /ɸ/ respectively. For a discussion of the representation of back unrounded vowels in ScG, see Ternes (1989: 142-5).

The rounded front vowels of GK and GA

We discuss here the status and possible origin of the front rounded vowels of GK and GA for convenience sake at this juncture since the question of whether or not such front rounded vowels are natural developments within the inherited CG vowel system or may be attributed to 'outside influence' is a matter of considerable importance when we come to discuss the development of the CG vowel system. Holmer (GK) states categorically that /y/ (and /ɸ/) are 'original' sounds. Indeed he goes as far as to say that /i/ (and /e/) in the west derive from /y/ (and /ɸ/) respectively (GK: 2). This is also implied in GA: §12. In his description of GA, Holmer tells us that /y/ is 'the typically Scottish sound in "guid" (='good'), which in some dialects renders English short 'i' or 'u', as in the local pronunciation of 'tup' (='ram') /typ/'. GA §12. In GK, however, Holmer states that 'there is no analogy to this sound in local Engl[ish] (except that the Lowlanders often narrow their u so much that it comes near [y])' (GK §13). Holmer's view that /y/ was the original sound seems partly to be based on the fact that 'an old native of the 'Largieside' [where /i/ is the norm] . . . has also the pronunciation /y/, which is the rule on the east coast' (GK: 10, n. 2). However, given that it is not immediately obvious why /y/ (and /ɸ/) should be 'original' sounds in Gaelic rather than 'borrowed' sounds from English in these areas, these vowels require some further discussion.

It is important to note that Gaelic was in a very weak position in Arran and Kintyre in 1937 and 1938 when Holmer visited these areas to undertake his research of the local dialects. Holmer tells us that 'there was no single person of those I met who used Gaelic in every day conversation' although there was 'a fair number of people who are still able to speak Gaelic, most of whom live in the southern part of the island' (GA:1). In the case of GK, Holmer implies that the majority of Gaelic speakers 'still remember Gaelic [rather] than speak it' (GK:1). He also implies that this state of affairs is 'quite a recent event'; he says that 'old people can tell about persons they knew in their own childhood who did not understand English' (GK:1).

Given the weak state of the language at this period in Arran and Kintyre and the knowledge of Lowland English which Holmer implies must have existed in these areas, it must remain a possibility that the rounded sounds /y/ and /ɸ/ derive from Lowland English rather than being of native growth in Gaelic. We have direct testimony from Arran at least that /y/ is 'the typically Scottish sound in "guid" (='good') (GA: 8) and that [ɸ] 'is approximately the vowel in English 'girl" (GA: 9). Knowledge of English is implied by the statement: 'the Arran people are always

accused by their Argyllshire neighbours of an extraordinary indulgence in what is termed a 'mixed' language' (GA: 2). We have direct testimony of an influx of Lowlanders into southern Kintyre where the rounded sounds /y/ and /ɸ/ occurred most commonly. Holmer reports that 'a considerable number of Lowlanders settled (after the time of the Covenanters, it is said)' in the southern part of Kintyre (GK: 1). Holmer (1938) in his *Studies on Argyllshire Gaelic* (p. 21) notes:

> Of the Lowland dialects the Ayrshire dialect is the most important in connection with the study of Highland dialects, partly because of its proximity to the Western Highland dialects, and partly because of its similarity with the town dialect in and around Glasgow, which has always had a strong influence on the colloquial language of the Highlands, especially that of Argyllshire. Scotch words and expressions are common all over the Highlands, among English as well as Gaelic speakers, and among the latter a lot of loanwords of Scotch origin are in current use.

We have seen then that there is some evidence for arguing that /y/ (and /ɸ/) are not 'original' sounds in south western Argyll dialects and it is important to keep this point in mind. Nevertheless, the close proximity of English /y/ in phonetic and geographical terms to Arran and Kintyre /y/ cannot be ignored or left unstated. That /y/ should develop from original //u// and //i// quite naturally in Gaelic is, of course, not impossible. Indeed, there is a close correlation between GK, GA /y(:)/ and /ɸ(:)/, and /ɯ(:)/ and /ɤ(:)/ in other ScG dialects respectively in terms of incidence. This in itself suggests that front rounded vowels are natural developments within ScG. The question of whether or not front rounded vowels in GA, GK represent (a) rounded and fronted varieties of original back unrounded vowels, or (b) relic features which represent the original state of affairs in ScG generally, from which back unrounded vowels have developed in other ScG dialects, is not entirely clear. Given the widespread distribution of back unrounded vowels, and their origins, and the possibility of English having exerted some influence on the phonology of GA and GK, (a) seems to represent the most satisfactory solution. We conclude therefore that front rounded vowels are unlikely to have developed naturally in ScG and that they are best explained as developments of original back unrounded vowels, influenced by the phonology of Lowland English.

The high-mid – low-mid and front – mid – back oppositions in ScG

The phonemic contrasts between front – mid – back, high – high-mid – low-mid – low have not been disputed by scholars, presumably on the grounds that each phoneme represents a discrete set of phonetically similar phones in most cases. There are a number of potentially grey areas, however, which have not hitherto been discussed. I

refer in particular to the mid vowel contrasts /ɛ(:)/~/e(:)/, /ɔ(:)/~/o(:)/ and finally to the mid – back contrast /ɯ/ ~ /u/.[78]

The mid vowel contrasts in ScG

One of the major differences between Irish and ScG phonology is the number of contrasts between mid vowels. Irish dialects, as we have seen, generally only have one front and one back mid vowel, i.e. /e/ and /o/.[79] According to the available monographs, however, the majority of ScG dialects contrast two mid vowels at the front and back position, i.e. /e(:)/ ~ /ɛ(:)/ and /o(:)/ ~ /ɔ(:)/.[80] This view of the inventory of ScG vowels has been generally accepted and raised to canonical status in Ternes (1973: 142-9; 1983: 102) despite the absence of convincing minimal pairs in many cases. The following table gives a list of minimal and near-minimal pairs from each of the monographs where such exist. Hyphens indicate that I have not succeeded in tracing suitable minimal or near-minimal pairs:

	/o/	/ɔ/	/o:/	/ɔ:/	/e/	/ɛ/	/e:/	/ɛ:/
GL	reothart	reothadh	mór	Mòr	leis-san	leasaich	shéibhig	thàibh
DOH	lobh	loth	--	--	beithe	beatha	beud	b'iad
Skye	boc	bochd	--	--	beathach beithe	*beatha	--	--
Ross	boc	bochd	--	--	beathach	*beatha	--	--
GA	--	--	--	--	beithe	beathaichean	--	--
GK	--	--	--	--	beitheach	beathach	--	--
EPG	cor	coir /r/	caoineadh leomhan	congnamh	an teine	annsein	an tréin an-dé	an drèin an tè
ESG	tolladh	talamh	--	--	air /r/	oirr(e) /r/		

Table 2B.1

Some of the minimal pairs which have been cited in evidence for mid vowel contrasts are unsatisfactory. In some cases bimorphemic forms are contrasted with single morphemes, e.g. GL *leis-san* /e/ ~ *leasaich* /ɛ/,[81] DOH *b'iad* /ɛ:/ ~ *beud* /e:/. In other cases, recent loanwords are contrasted with Gaelic words e.g. *shéibhig* /e:/, *thàibh* /ɛ:/ (GL). We will see later that the Lewis form *Mòr* /ɔ:/, which is exceptional in its phonological form, raises questions about the inclusion of proper names in phonological analysis.

[78]There does not appear to be much confusion between /u/ and /o/ in ScG dialects. See, however, GL: 72.

[79]Donegal dialects do have a contrast between /ɔ(:)/ and /o(:)/ as we have seen above.

[80]With the exception of ESG which does not have the contrast /e:/~/ɛ:/.

[81]*Beathach* /e/ ~ *beath(a)* /ɛ/ would perhaps be a better pair.

Examples of the minimal or near-minimal pairs which illustrate the oppositions between the long mid vowels are particularly rare. In the case of the short vowels, the oppositions between high-mid and low-mid are usually restricted to one particular environment, e.g. the opposition between /e/ and /ɛ/ is most widely attested in the environment / __ h. In Hebridean dialects where preaspiration before /k/ takes the form /x/, the opposition between /o/ and /ɔ/ is widely attested in the pair *boc* /boxg/ ~ *bochd* /bɔxg/. Furthermore, for the majority[82] of ScG dialects the low vowels /ɔ(:)/, /ɛ/ tend to occur more frequently than the high vowels /o(:)/, /e/, the latter usually being restricted to a set of well-defined, and in some cases, limited evironments. The high vowel /e:/ occurs more frequently than /ɛ:/ in most dialects.

In some cases there is overlap or fluctuation between high-mid and low-mid vowels. Oftedal (GL: 57-8) notes that 'there is often fluctuation not only between the different allophones of /ɛ/, but even between the phonemes /ɛ/ and /e/'. In his discussion of /e/, he says:

> These variants [the lower allophones of /e/] resemble the higher allophones of /ɛ/ very much, and as /e/ and /ɛ/ are almost in complementary distribution, it is sometimes difficult to decide to which phoneme a given sound of this intermediate quality belongs. [lĕht] 'with you' has decidedly the phoneme /e/, while [p^{h}ĕht] 'a pet' has /ɛ/. Border cases are [mĕhtəl] 'metal', [swɛhter] 'sweater', and [d'ɛhtəməx] 'important', which all seem to have a vowel higher than that of [p^{h}ĕht] (recte) but lower than that of [lĕht]. I shall — somewhat arbitrarily — assign these variants to the phoneme /ɛ/; the material does not impose one or the other classification. (GL: 60-1)

Oftedal's use of the prepositional pronoun *leat* /e/ is questionable since this form is arguable bimorphemic, containing {*le* /le/}+{*thu*}. It can be shown for most dialects that mid-low and mid-high vowels are to a large extent in complementary distribution. This complementary distribution, coupled with the low number of minimal pairs, indicates that the functional load of the mid-high ~ mid-low oppositions is very low in each case. All previous accounts of ScG dialects unquestioningly assign individual phones to phonemes on the basis of phonetic similarity. Low vowels are assigned to the phonemes /ɛ(:)/, /ɔ(:)/, high vowels to the phonemes /e(:)/, /o(:)/.

A detailed examination of the distribution of the mid vowels according to phonological environment reveals that in most cases the distribution between high- and low-mid phones is to a large extent complementary. In some cases, the occurrence of high- and low-mid vowels can be expressed in terms of allophonic

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[82] /o:/ is, however, quite common in ESG.

rules, thus calling into question the validity of the phonemic contrasts in such cases. The analysis presented below is based on GL since that study contains one of the most comprehensive phonetic descriptions of the mid vowel phones in any ScG dialect.

The mid vowel oppositions in GL

The /e/~/ɛ/ opposition

The distribution of [e] and [ɛ] phones may be set out as follows:

Oftedal's /e/		**Oftedal's /ɛ/**	
[ĕ], [ê]	**__ C, C = /p t k s/**	**[ĕ], [æ̂]**	**__ C, C = /n b m v p s d k r x g ɣ t/**
	k' __ p **(t)r __ p** g' __ t l' __ t br' __ k br __ s r __ -(?)[83]		**L' __ p** **p __ t** **p __ k** **d' __ s** b __ n br' __ b f __ m d' __ v N' __ d k' __ r ʃ __ x sm __ g t' __ ɣ
		[ɛ]	**__ C, C = L N R[84]**
			p __ Nt
[ɛ]	**__ t**	**[ɛ]**	**__ t**
	m, sw, d' __ t		m, sw, d' __ t
[e]	**__ C, C = /g /**		
	#, f __ g		
		[ɛ], [ĕ]	**__ -**
			#, s, N __ -
[e], [ĕ]	**__ h**	**[ê], [ɛ], [ĕ], [æ̂], [æ]**	**__ h, #, x'**
	L' __ #/h l' __ h/-		#, b, k __ h L' __#/h l' __ #/h L' __ x'
[e]	**#, C __ C'** (including /l'/)[85]	**[ɛ]**[86]	**#, C __ t'**
	# __ k', l', r' f __ k'		# __ t' k __ t'

Table 2B.2: Distribution of [e] and [ɛ] phones in GL

Table 2B.2 confirms that the distribution of [e] and [ɛ] phones is to a large extent complementary. Both sets of phones occur in the macro-environments __ C, C = /p t k s h/ and C __. If we consider the quality of the preceding consonant in the former environment, we see that [e] phones occur in the environments C' __ t, k and C __ s, while [ɛ] phones occur in C __ t, k and C' __s, thus illustrating that both phones are in complementary distribution before the segments /t k s/.[87] If we consider the following

[83]In forms of the preposition *roimh*, see GL: 60-1. A hyphen indicates hiatus.
[84]Only in recent loans from English. See GL: 58.
[85]*creileag* 'wasp' has /e/ more frequently than /ɛ/. GL: 58.
[86]Oftedal does not give precise phonetic value for the phone in this position. See GL: 58.
[87]The distribution of [e] in C __ s and [ɛ] in C' __ s is difficult to account for on phonetic grounds. It is worth noting that the only example of a word of shape Ces is the English loan word 'bracelet' which Oftedal transcribes as [brĕslɛht'] GL: 60.

consonant in the environment C __, we see that [e] occurs before /k' l' r'/ and [ɛ] before /t'/. This leaves the environments C __ p, h. We are thus left with the following potential contrasting forms:

k' __ p	L' __ p
ceap [ĕ]	*leap(a)* [æ]
b __ h	b __ h
beathach [e]	*beath(a)* [æ̂], [ê]

A realisation rule could describe the distribution of [e] and [ɛ] in the words *ceap, leap(a)*, assigning the higher variety to the position following /k'/,[88] the lower one to the position following /L'/.[89] That the occurrence of both phones is dependent to some extent on the quality of the preceding segment could be inferred from the following forms: *leth* 'half' [L'e], [L'ĕ] (unlenited) and [l'æh] (lenited) GL: 58. We are thus left with the near minimal pair *beathach* [e] ~ *beath(a)* [æ̂], [ê].[90] It is possible to describe the distribution allophonically in these cases also. Following the segment /b/ and preceding /h/, [ɛ] is assigned to monosyllables, [e] otherwise.

We have seen that it is possible to describe the occurrence of [e] and [ɛ] phones, with a few possible minor exceptions, in terms of realisation or allophonic rules. This would suggest one mid front vowel /e/ or /ɛ/ for this dialect. Examples of variation between [e] and [ɛ] could be taken as instances of sub-phonemic variation, e.g. *leathainn* [e], [ɛ], *leath* [e], [ɛ], *leitheid* [e], [ɛ]. If a mono-phonemic approach is adopted, it is difficult, though not impossible, to explain the occurrence of the phones in *beathach* [e] and *beath(a)* [ɛ].

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[88]Compare the occurrence of [e] before /k'/ above.

[89]The occurrence of higher (more front) vowels in the vicinity of /k'/ may lend some support to the suggestion made for Irish dialects that palatalised velars may be acoustically more front (and high) than other palatalised consonants in ScG also. Compare, however, the distribution of [e:] and [ɛ:] in GL described below.

[90]Oftedal is absolutely certain of the qualities of both phones: 'I have only heard /e/ in the former [*beathach*] and variants of [ɛ] in the latter [*beatha*]' (GL: 58).

The /e:/~/ɛ:/ opposition

Oftedal provides no allophonic description of the long front mid vowels. He does, however, note that 'long /ɛ:/ occurs only in a limited number of words' GL: 60. The distribution between [e:] and [ɛ:] can be set out as follows:

Oftedal's [e:]	**Oftedal's [ɛ:]**
C' __ # gl, t' __ #	**C, C' __ #** R, f __ # k', ʃ, gr' __ #
#, C __ C # __ v h, tr __ n b+ __ d[91] sb __ r	**C __ C, -** f __ h R __ v g __ -
C' __ C k', L' __ m L' __ n d', ʃ+ __ d g' __ g	**C' __ C** kr', N' __ v
C' __ C' br', d', ʃ __ d' k', L' __ r' r' __ ʃ	
C __ C' f __ L' h __ d' R, sb __ r'	

Table 2B.3: Distribution of [e:] and [ɛ:] in GL

Table 2B.3 confirms that the distribution of [e:] and [ɛ:] phones are to a large extent complementary. [ɛ:] does not occur in the prepalatal environment. Both sets of phones occur in the macro-environments C' __ #, C, C' __ C. A closer examination in terms of micro-environments reveals that their distribution is in fact complementary. The following near minimal pairs do, however, arise in the macro environment C' __ #:

[e:]	[ɛ:]
glé	*gnè* [ɛ̃:]
té	*'se* (< is + e)
	b'e (< ba + e)
	cè

Variation between [ẽ:] and [ɛ̃:] occurs in the forms *chan e, an e*, see GL: 245. The pair *glé* ~ *gnè* is not sufficient to confirm the contrast since phonetic [ɛ̃:] could

[91]The symbol + indicates a morpheme boundary.

represent an underlying nasalised /e:/ phoneme; according to GL, long /e:/ does not occur nasalised except in the copula forms *chan e, an e* in which cases it alternates with [ɛ̃:], see GL: 40, 245. The distribution of [e:] and [ɛ:] in the pair *té ~ cè* can be expressed in terms of an allophonic rule which assigns [e:] in final position to words with initial /t'/, [ɛ:] in final position to words with initial /k'/. This is contrary to the rules suggested above for short [e] which assigned [e] rather than [ɛ] in the immediate environment of /k'/, e.g. *ceap, faic.*[92]

If we expand our data to include (recent) borrowings from English, the picture changes slightly. We get the following pairs:

Gaelic	**English**	**English**
[ɛ:]	**[e:]**	**[ɛ:]**
sèimh [ʃɛ̃:v]	*shave* [ʃe:v]	
'se [ʃɛ:]	*chair* [ʃe:-ər]	
	pane [pe:nə]	*plain* [plɛ̃:nə]

The pairs *sèimh ~ shave, plain ~ plane* are not sufficient to establish the contrast because of the nasality of [ɛ̃:] in *sèimh, plain*. Cf. *glé ~ gnè* above. The inclusion of the English data does provide a near minimal pair *'se* [ɛ:] ~ *chair* [e:]. However, the phonological structure of each is sufficiently different to enable us to postulate an allophonic rule which assigns [ɛ:] to word final position following /ʃ+ /.[93] The occurrence of both phones in these and preceding forms may be stated as follows:

/e:/	→	[ɛ̃:]	(i.e. nasalised)
	→	[ɛ:]	/ k', # __ #
	→	[e:]	otherwise

If the complementary distribution of both phones as described above is accepted, it argues against a phonemic contrast between [e:] and [ɛ:] for this dialect. Our discussion of English loanwords illustrates how lexical borrowing may affect the phonological structure of the borrowing language. This is a point to which we return in chapter 8.

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[92]But note that Borgstrøm noted /e:/ in the word *cé* in Bernera, Lewis, DOH: 29.

[93]Although the pronoun is realised as /ɛ:/ or /e:/ independently, it is always realised as /ɛ:/ following *is* /ʃ/.

The /o/~/ɔ/ contrast

The distribution between [o] and [ɔ̂], [ɔ], [ɔ̌] may be set out as follows:

Oftedal's /o/		**Oftedal's /ɔ/**	
[o]	**C __ C**	[ɔ̌]	**C __ C**
	b, t __ g #, t __ b k, t __ m k, t __ N sg __ L kr __ k #, m __ x ɣ, k, kr __ h ɣ __ # v, f __ j		g, k __ g b __ d d, k, # __ n b, dr, kr, N __ x d, g, k, sb, t __ r dr, k, sb __ h dr __ m L, v __ s m, #, s __ L pr __ N s __ k
		[ɔ]	#, C __ R, p, t
			k, g, L, t, # __ R k __ p L __ t
[o]	**C' __ #**	[ɔ̌]	**C' __ C**
	ɣ' __ #		d' __ x, l' __ -
[o]	**C __ -**	[ɔ̂]	**#, C, C' __ -**
	g, b, m, k, h, #, R, s, tr, gr, tr, r, __ -		#, f, L, R g, t, tr __ - L', k' __ -
		[ɔ̌]	**C __ C'**
			b, # __ r' b, k, s, t __ ʃ d, sg, t __ l k __ N' tr __ x'

Table 2B.4: The distribution of [o] and [ɔ] phones in GL

Table 2B.4 confirms that the distribution of [o] and [ɔ] phones is to a large extent complementary. Variation occurs occasionally between [o] and [ɔ], e.g. *crotal* (GL: 72). Both sets of phones occur in the macro-environments __ C and C __ -. It is noteworthy that [o] does not normally occur in a palatal environment. A detailed anlaysis of the macro-environment __ C shows that both phones occur in the environments C __ g, x, k, h, m, N, L. In most of these micro-environments the preceding consonant is phonologically different for each phone [o] and [ɔ]. It is worth noting that [o] occurs frequently following the segment /k/ (and /kr/, /sg/). However, near minimal pairs occur in the micro-environment C __ h:

[o]		[ɔ̃]	
k __ h	*comhartaich* [õ]	k __ h	*comharradh* [ɔ̃]
kr __ h	*crodh*	dr __ h	*drochaid*[94]

It is noteworthy that [ɔ] does not occur in absolute final position or before final /h/. The distribution between [o] and [ɔ] in *crodh, drochaid* could be expressed in terms of a realisation rule assigning the higher allophone [o] to the position before final /h/, non-nasalised [ɔ] before non final /h/. However, both [õ] and [ɔ̃] (nasalised) occur before /h/ in the pair *comhartaich ~ comharradh*. This latter pair provides a good minimal pair for the contrast /ɔ̃/~/õ/ in this environment.

A detailed analysis of the micro-environment C __ - also shows that both phones occur in the position before hiatus. It is worth noting that higher phones [ô] occur in this position and, more significantly, that Oftedal found such phones difficult to distinguish from [o] (GL: 68). Both phones occur before hiatus when the preceding elements are /#, g, R, tr/:

	[o]	[ô]
# __ -	*odhar,*	*ogha, othaisg*
g __ -	*gobha, gabhar, gabhail*	*gabhail*
R __ -	*rabhainn*	*rathaid* (G), *reothadh*
tr __ -	*trobhad, tromham* [õ]	*treabhadh*

It is difficult to set up allophonic rules which would explain the distribution in the above cases. We may conclude from the above discussion that there is good evidence for the /o/~/ɔ/ contrast in GL.

Borgstrøm's 'mixed' rounded [o]

Borgstrøm (SR: §17.2) notes: 'In Dunv. and with some speakers in Br. there is a tendency to use a kind of *o* before the palatal consonants *l', L', r'* and *t'* where the normal usage has *r* (§20, 1c); *o* in these positions has a special pronunciation: it begins with the normal back articulation, which quickly gives way to a "flat" or "mixed" articulation; the vowel is rounded throughout.' Clearly Borgstrøm regarded this sound as a positional allophone of the /o/ phoneme in these dialects. This 'kind of *o*' sound, which I have myself observed in Dùn Bheagan speech,[95] differs phonetically from the normal 'mid back round' [o] which occurs in *bois, fois, coiseachd, cois, boinne* (SR: §17.1). It is difficult to reconcile the difference of allophones which

[94]This word appears with medial /x/ and /h/.
[95]With Màiri Anna Macleod (née Montgomery).

occur in *boinne, cois* ('normal' [o]) and *coille* ('mixed' [o]). It is also possible to analyse this 'mixed flat' [o] sound as a member of the /ɤ/ phoneme. The 'mixed flat' [o] shares with all allophones of /ɤ/ the feature of being 'back-flat' vowels (SR: §20). This variety of [o] differs from allophones of /ɤ/ only in its roundness. All instances which Borgstrøm quotes of the 'mixed flat' [o] are preceded by the velars /k g/. The rounding of an underlying /ɤ/ following these velar segments may be seen as a co-articulatory phenomenon. In other words the 'mixed' round phone in this dialect represents an instance of a fudged phone, which is intermediary in value between the two phonemes /o/ and /ɤ/.

The /o:/~/ɔ:/ opposition

Oftedal notes that /ɔ:/ always occurs as a high vowel [ɔ̂:] which 'is not always easy to distinguish from *o*' (GL: 68). Variation between both occurs in the word *geòidh* (GL: 72). The distribution between [o:] and [ɔ̂:] may be set out as follows:

Oftedal's [o:]	**Oftedal's [ɔ̂:]**
C __ C	**#, C __ C**
m __ r; k __ r (ð:) f __ n; k __ n (ð:) s __ L; k __ L (ð:) k __ R (ð:) m __ x (ð:)	m __ r # __ R, g, L, r #, g, b, t __ R d __ x p __ s R __ n
C __ #	
b, k __ # kr __ # (ð:)	
C __ C'	**#, C __ C'**
k __ g' m __ N' (ð:) m __ t' (ð:) t __ ʃ (ð:)	# __ j b, R __ d' k __ r' sdr __ N' t __ ʃ
C' __ C, #	**C' __ C, #**
d', N' __ n (ð:) smj __ r (ð:) N' __ # (ð:)	L', l' __ n L' __ r j, ʃ __ L bj, k' __ #
C' __ C'	**C' __ C'**
g' __ j (o: ~ ɔ:) j __ N' (ð:)	j __ r' fj __ l'
C __ -	
k __ - k __ - (ð:)	

Table 2B.5: Distribution of [o:] and [ɔ̂:] in GL

Table 2B.5 confirms that the distribution of [o:] and [ɔ̂:] phones are to a large extent complementary although this is not immediately obvious. [ɔ̂:] appears to have a defective distribution; it never occurs in the environments C __ #, -. Similarly [o:] does not occur in absolute word initial position. Both sets of phones occur in the macro-environments C __ C, C __ C', C' __ C, C' __ C'. A closer examination of each of these macro-environments shows that where both phones occur in similar micro-environments that [o:] occurs only when it is nasalised with one notable exception, i.e. *mór* [o:]:

	[õ:]	[ɔ̂:]
C __ C		
__ R	k __ R	#, g, b, t __ R
__ x	m __ x	d __ x
C __ C'		
__ N'	m __ N'	sdr __ N'
__ ʃ	t __ ʃ	t __ ʃ
C' __ C		
__ n	d', N' __ n	L', l __ n
__ r	smj __ r	L' __ r
__ #	N' __ #	bj, k' __ #
C' __ C'[96]	j __ N'	j __ r' fj __ l

Table 2B.6: Distribution of [õ:] and [ɔ̂:] in GL

The distribution between [õ:] and [ɔ̂:] can be described in terms of the following allophonic rule:[97]

/o:/ → [õ:] (i.e. nasalised)
→ [o:] / m, f __
→ [o:] / __ #, -
→ [ɔ:] otherwise

[96]Both [o:] and [ɔ:] occur in g' __ j *geòidh*.
[97]Compare the similar rule suggested for the distribution of [e:] and [ɛ:] above.

The distribution between both sets of phones is a classical example of complementary distribution. The occurrence of higher allophones in nasalised environments is well motivated phonetically. There is, however, one notable exception to the above set of allophonic rules. That exception is the personal name *Mòr* which is realised as [ɔ̃:]. In fact, this name contrasts with the adjective *mór* [o:] 'big' from which the proper name derives historically. It is a point for debate whether or not proper names, in particular, personal names, should be included as data for phonological analysis. There is some evidence which might suggest that certain classes of proper names may not be subject to the same linguistic rules as normal lexical items.[98] If we exclude the proper name *Mòr* from our analysis, we can express the distribution between [o:] and [ɔ:] phones purely in terms of allophonic rules. However, the fact that *Mòr* /ɔ:/ contrasts with *mór* /o:/ is very suggestive of a phonemic /ɔ:/~/o:/ contrast with extremely low functional load in this dialect.

Summary

A detailed analysis of the distribution of the mid vowels in the dialect of GL has shown that the traditional mid vowel contrasts could arguably be collapsed for the long vowels [e:], [ɛ:] (phoneme /e:/) and [o:], [ɔ:] (phoneme /o:/) but not for the short vowels /e/~ /ɛ/, /o/~/ɔ/. While this approach has the advantage of gaining in economy, it has the disadvantage of introducing a set of relatively complex allophonic rules which are perhaps more suitable at a more abstract level of phonological analysis. The adoption of a reduced long vowel system in the present study would have the further disadvantage of concealing valuable phonetic information. Due to the limited data contained in other monograph studies of ScG dialects, it is not possible to say at the present state of knowledge, how comparable or applicable the analysis presented here for GL is to other dialects.[99] For these reasons the traditional high- and low-mid contrasts have been retained in this study.

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[98]For a discussion of place-names in this context, see Nicolaisen (1988: 23-4) and Ó Maolalaigh (1997). For a discussion of ScG proper names and their differentiation in grammatical terms to other lexical items, see, see Hamp (1959: 57-9).

[99]Holmer (GK: 42) seems to imply that in Kintyre there is no contrast between [ɔ] and [o] when he says that 'the distribution of the two sounds depends on surrounding consonants'. There is insufficient evidence in GK to establish whether or not there is a phonemic contrast between /ɔ(:)/ and /o(:)/. The nearest confirmation which we have for a contrast are the following forms [bok] *boc*, [oxg] *ochd*, [bɔxg] *bochd*.

The /u/~/ɯ/ contrast in ScG

Oftedal describes three main allophones of the /u/ phoneme as follows:

[ụ]	high central rounded
[U]	high back rounded
[u]	intermediate between both [ụ] and [U]

[U] occurs in the immediate vacinity of the segments /L N R/, before the segments /x j/ and in words of the shape (C) __ - VL. It also occurs in the word *iutharn*. Otherwise a more fronted [ụ] or [u] (as described above) occurs.

/ɯ/, which Oftedal desribes as central to back, high to higher mid unrounded, has two main allophones:

[ɯ̣]	advanced lower high-central unrounded
[ɯ]	lower high-back unrounded

[ɯ̣] is more advanced in the prepalatal environment when preceded by /t/ and followed by /L' g'/. This more advanced allophone also occurs in *ruith* (PAST) 'ran'.

The distribution between both sets of phones may be set out as follows:

Oftedal's /u/		**Oftedal's /ɯ/**	
[ụ]	__ N, L, R __ __ x __ j __ -VL # __ hVR (iutharn)	[ɯ̣]	__ C' r __ h (*ruith* (PAST))
[u]	otherwise: **#, C __ C**	[ɯ]	otherwise: **#, C __ C**
	#, k, x __ m #, x+,[100] m __ L r, d/h[101] __ g d, gr, __ h ɣ __ t #, k, R, d, x __ N L __ s m, L __ x #, k __ r R __ d #, s __ R		#, t __ [r][102] tr __ [m] L __ sg (ɯ ~ ɔ) R __ xg r __ h
	#, C __ C'		**#, C __ C'**
	k __ ʃ k, f, m __ r' b, m, R, L __ j d __ L' #, f, k, t, d __ l' #, f, b __ N' (ũ) k __ d' k __ g' kL __ x'		#, L __ ʃ #, s, g, kr, d __ j s, d __ [r'] t/h __ t'[103] #, d, kr, sL __ N' (ɯ̃)[104] t __ L' t __ g'
	__ hiatus		
	#, d, k, t, m, f, g __ - pj, ʃ __ -		
	C' __ C		**C' __ C**
	ʃ __ N j, t' __ h fl __ x j __ L		br' __ g t' __ [m] t' __ [r] bj __ R

Table 2B.7: Distribution of /u/ and /ɯ/ in GL

Table 2B.7 confirms that the distribution of [u] and [ɯ] phones are to a large extent complementary although this is not immediately obvious. [ɯ] appears to have a defective distribution; it does not occur before hiatus. Both sets of phones occur in the macro-environments #, C __ C, C' and C' __ C. A close examination of the micro-environments in which both phones occur reveals some interesting points. In particular, [ɯ] seems not to occur following the segments /k f m b/. Similarly [u]

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[100]*a h-uile*. For discussion, see GL: 76-7.
[101]*théid, déid.*
[102]Square brackets here indicate that the vowel occurs in a svarabhakti syllable.
[103]The slash / here indicates morphophonemic alternation.
[104]Both [ũ] and [ɯ̃] in *uinneag*.

seems not to occur following the segment /t/ or in svarabhakti syllables.[105] While this distribution may be due to a deficiency in the data, it is nevertheless a significant observation.

A comparison of the distribution of both phones in the macro-environment __ C reveals that both occur preceding the segments /r m s x h/ as follows:

	[u]	[ɯ]
# __ r	urad	urchar, urbal
C __ r	cur	turas, turadh
__ m	#, k, x __	tr __
L __ s	lusan	losgadh
__ x	m, L __	R __
__ h	d, gr __	r __

Table 2B.8

The distribution can be seen to be complementary before the segments /m x h/. Preceding the segments /r/ and /s/, we appear to have a group of near minimal pairs. However, there is a significant phonological difference between *urad, cur* [u] on the one hand and *urchar, urbal, turas, turadh* [ɯ] on the other. The latter group all contain svarabhakti syllables. We have already noted that [u] does not occur in such syllables. The distribution before /r/ in these words could be expressed in terms of an allophonic rule:

/u/ → [ɯ] / __r in svarabhakti syllables
→ [u] / __r otherwise

Before nonpalatals, this leaves the pair *lusan* [u] ~ *losgadh* [ɯ] which looks like a near-minimal pair. However, we may note that (i) the phonological environments are different, L __ s and L __ sg respectively; (ii) the vowel in *losgadh* alternates between [ɯ] and [ɔ]. [ɯ] realisations of *losgadh* could be analysed as being bimorphemic, containing root with underlying /ɯ/, based on the finite form {*loisg*} [ɯ] + {*adh*}.

A comparison of the distribution of [u] and [ɯ] in the macro-environment __ C' reveals a similar picture to that described above for __ C. Both phones occur before the segments /ʃ j r' N' L' g'/ as follows:

[105]Neither does [u] occur in the environment s __ C'.

	[u]	[ɯ]
__ ʃ	k __	#, L __
__ j	b, m, R, L __	#, s, g, kr, d __
__ r'	k, f, m __	s __ [r']
__ N'	#, f, b (ũ) __ (*uinnean* 'anvil')	#, d, kr, sL (ɯ̃) __ (*uinneag*)
__ L'	d __	t __
__ g'	k __	t __

Table 2B.9

Clearly, the distribution is largely complementary. We may note once again the occurrence of [u] following /k f b m/ and the occurrence of [ɯ] following /t/. We may also note the occurrence of [ɯ] following /s/ in a svarabhakti *r*-syllable. The only near minimal pair which comes to light in the environment __ C' is *uinnean* [ũ] 'anvil' ~ *uinneag* [ɯ̃] 'window'. However, in the case of *uinneag*, there is variation between [ũ] and [ɯ̃]. This pair provides some slight evidence for the contrast /u/ ~ /ɯ/.[106]

Oftedal appears to have made a slight misjudgement in his analysis of [u] and [ɯ] phones. Referring to the advanced variant [ɯ̟], he notes:

> This sound type [[ɯ]] seems to have all its features in common with [u̟] except for the lip-rounding of the latter; the auditory impression is similar to that of [u̟], especially if a /j/ follows: [gɯjə] sounds almost as [gu̟jə] (but there can be no confusion between phonemes, *as the phoneme /u/ is represented in this position not by [u̟] but by the entirely different-sounding [U]*) [italics RÓM]. GL: 80

We draw particular attention to the italicised part of the last quotation. In his discussion of the phoneme /u/, Oftedal notes that the variant [U] occurs before the segment /j/ and cites the following examples: *buidhe, b(h)uidheach, a-muigh* (GL: 76). These are in fact the only examples in GL which contain /u/ in the environment __ j. Oftedal failed to recognise that the significant conditioning factor in these examples was the initial labial segments, not the following palatal /j/. This led him to the incorrect conclusion that words like *guidhe,* which he transcribed as [ɯ], could

[106]One wonders if Oftedal heard the word *uinnean* following the article [əN] only in which case [u] might be the expected realisation. This applies equally to *uinneag*. However, Oftedal, unlike Borgstrøm, does not provide information on the fluctuation between [u] and [ɯ] in words which are preceded by the article. See DOH: 139.

not have represented an underlying /u/ phoneme since, according to his incorrect assumption, [U] would be the expected realisation in that environment. This raises some doubt with regard to Oftedal's phonemic analysis of the [u] and [ɯ] phones in the prepalatal environment.

The majority of instances of the occurrences of the phones [u] and [ɯ] can be described by the following distributional rules:

//u// →	[u]	__ N, L, R __ k, f, m, b, d __ __ - __ l'
//u// →	[ɯ]	t __ otherwise

Minor rules would have to take account of *duine* [ɯ], *loisg* [ɯ] etc.[107] In such a scenario, the set of minor rules would be unduly complex and would pose some problems from the phonetic point of view. In an analysis which assigns both phones [u], [ɯ] to the same phoneme /u/, it is difficult to explain the phonetic motivation for [u] following /d/ and [ɯ] following /t/ in the near minimal pair *duilleag* ~ *tuilleadh*.[108] The pairs *uinnean* [u]~*uinneag* [ɯ̃], [ũ], *duilleag* [u]~*tuilleadh* [ɯ] provide some evidence for the contrast /u/~/ɯ/ in GL.

Due to the limited data contained in other monograph studies of ScG dialects, it is not possible to say at the present state of knowledge, how comparable or applicable the analysis presented here for GL is to other dialects. The contrast /u/~/ɯ/ will, however, be retained throughout the present study for ScG dialects. This has the added advantage of retaining valuable phonetic information for our discussion of the historical development of //u// in ScG.

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[107]In the case of *duine*, it could be stated that [ɯ] occurs before /N'/ (< //n'// in this case).
[108]Note /u/ occurs following /t/ in the word *tuil*.

Diphthongs

The phonological interpretation of vowel sequences constitutes one of the major problems of ScG phonology. In most cases, we have to differentiate between vowel sequences which belong to the same syllable and vowel sequences which can be divided between two syllables. Such phonological interpretations of vowel sequences naturally rely on definitions of the syllable. However, as Ternes (1989: 96) points out, the definition of the syllable itself 'presents one of the most intricate problems of Sc.G. phonemic analysis'. The number of diphthongs reported in descriptions of Scottish Gaelic, when compared with those of Irish dialects, is very high. Oftedal's description of GL, by far the most economical account of ScG diphthongs thus far, gives 10 diphthongs all of which may be oral or nasalised. Borgstrøm (DOH) gives 28 diphthongs for the dialects of the Outer Hebrides.

There have been two different approaches to the description of vowel sequences in ScG which may be classified broadly as (A) traditional, e.g. DOH, SR, GL and (B) innovative, e.g. ESG, EPG, Ternes 1973. The latter approach leads to a high number of vowel sequences, especially in the case of ESG: 61-2, where a total of 69 two-vowel sequences are given. For the purposes of the present study, I have made no attempt to provide a traditional phonemic analysis of ScG diphthongs. I have, in the case of descriptions of type (B), merely followed the authors in their representation of vowel sequences as it would be counter-productive to do otherwise with no obvious advantage gained. For this reason, a brief description of the notation used by these authors is given below. In the case of the traditional descriptions of type (A), I have on the whole followed the authors' notation (e.g. GL) except in the case of Borgstrøm's description of DOH, SR, where I have adopted the symbol /ʏi/ instead of his /øi/ in order to avoid confusion with the rounded vowels of GA and GK; I have also interpreted some of his phonetic diphthongs as allophones rather than phonemes in their own right; this is illustrated below.

Representation of diphthongs/vowel sequences in ScG dialects

Type (A)

Traditional descriptions of type (A) distinguish between (a) vowel sequences which belong to the same phonological syllable, traditionally referred to as diphthongs, e.g. /fiəx/ *fiach* 'debt' and (b) disyllabic clusters, i.e. vowel sequences which can be divided between two syllables, e.g. /fi-əx/ *fitheach* 'raven'. The hyphen is of course a symbolic device which helps visually to distinguish between different types of vowel sequences. It may in some cases denote a phoneme, e.g. a glottal stop (GA: 37-8); in others it

may denote a suprasegmental feature, e.g. a difference in intonation (GL: 25-6). In traditional accounts of ScG dialects, the hyphen has also been interpreted as a syllable boundary. For the most part in this study, I have concerned myself only with the vowels or vowel sequences which immediately precede such 'syllable boundaries'. I take such vowels and diphthongs to be the nucleus of the stressed syllable and so, have ignored the vocalic elements which follow these syllable boundaries. In other words, I take the reflex of historical //i// in the word *fitheach* /fi-əx/ (GL) to be /i/ not /iə/ or /i-ə/ ; similarly, the historical reflex of //a// in (GL) *laghach* /Lɤ-əx/ (GL) and *abhainn* /ãũ-iN'/ (GL) is taken to be /ɤ/ and /ãũ/ respectively.

The following table illustrates the correspondences between the symbols used to represent diphthongs in the present study and those used by Borgstrøm and Oftedal in DOH, S, R and GL respectively:[109]

Present study	GL	DOH	S	R
/iə/	iə	iə	iə	iə
/ia/	ia	ia	ia	ia
/uə/	uə	uə	uə	uə
/ua/	ua	ua	ua	ua
/ai/	ɑi	ɑi	ɑi	ɑi
/ɛi/	--	æi, ɛi	æi, ɛi	ɛi
/ei/	ei	ei	ei	(ei)
/ɔi/	--	ɔ̣i	--	--
/ui/ = /ɯi/	ui	ui, ʎi	ui, ʎi	ui, ʎi
/ɤi/	əi	øi	øi, əi	øi
/au/	ɑu	ɑu	ɑu	ɑu
/ɛu/	--	æu	æu	æu, ɛu
/ɔu/	ɔu	ɔ̣u	ɔu	ou, øu
/iu/	--	iu	iu	iu
/iu:/ = /iʎ:/	--	iu:	iu:, iʎ:	iu:
/eɔ/	--	eɔ	--	eɔ
/eɔ:/ = /ɛɔ:/	--	eɔ:	eɔ:	ɛɔ:
/eo/	--	eo	eo	--
/eo:/	--	eo:	--	eo:
/eɤ:/	--	--	--	eø:
/ia:/, /ia·/	--	--	ia:	ia·
/ua·/	--	--	--	ua·
/Ii/	--	ɯ	--	--
/Uu/[110]	--	Uu	--	--

Table 2B.10: Diphthongal symbols in type (A) dialects

[109]Holmer in his accounts of GA and GK provides no discussion of diphthongs in these dialects. The symbols which he uses to represent dipthongs have been reproduced in the present study with the usual transliteration of /ʎ/ and /ɔ̣/ (/ö/) to /y/ and /ø/ respectively.

[110]Borgstrøm refers to the dipthongs /Ii/, /Uu/ as 'monophonematic' (DOH: 45, 145); he notes these only for Lewis and Harris dialects. They correspond to /i:/ and /u:/ respectively in other dialects.

The major departure from Borgstrøm's set of symbols is the use of /ɛ/, /ɤ/ and /ɯ/ for his /æ/, /ɸ/ and /ʎ/ respectively. Similarly, I have also used /ɤ/ for Oftedal's /ə/. As noted earlier, I have not made any effort to reduce the systems presented above by providing a strict phonemic analysis of them. One could perhaps economise on description in a number of ways. One could, for example, take [ɛi] as a variant of the phoneme /ei/ and perhaps [ɛu] as a variant of /au/. I have decided against this for the following reasons: (i) it seems unwise to economise in this manner on the basis of a limited sample; (ii) the opposition /ɛ/~/e/ is established for simple vowels; (iii) *banntrach* /au/ ~ *beanntan* /ɛu/ provide near minimal pairs for the opposition. It must be said, however, that the contrast between /au/ and /ɛu/ rests partially on the phonological interpretation of palatalised labials. If we allow phonemic palatalised labials in the phonology of Gaelic, the occurrence of [ɛu] following C'[+labial] is predictable and thus might argue for [ɛu] being a member of /au/. The preference in this study is nevertheless to retain both /ɛi/ and /ɛu/. Some of the vowel sequences listed above are open to other interpretations. Some vowel sequences, for example, may contain on-glides; /iu/ could in some dialects represent /u/ with an on-glide [ʲ]. See DOH: §191, p. 147. Equally, some diphthongs appear to be marginal and occur only in a small set of words, e.g. in DOH /eo:/ occurs only in the word **feómail* < *feidhmeamhail*, [eo] only in the word *feadhain*. It follows from the above discussion that the symbols used to represent diphthongs in the present study do not necessarily refer to phonemic units. The retention of diphthongal phones used in the monographs has the advantage of retaining a certain amount of valuable phonetic information.

Type (B)

Dorian and Ó Murchú's treatment of vowel sequences are fundamentally different from traditional accounts of ScG dialects and as such require some comment here.

EPG

Ó Murchú distinguishes between 4 classes of vowel sequences which he refers to as complex syllable nuclei. With the exception perhaps of some of the nuclei in class 4, it is implied that each group of symbols is intended to signify indivisible phonological units as opposed to sequences of discrete segments.[111] These four classes may be represented as follows:

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[111]In his discussion of type 4(d), Ó Murchú notes that the final glides 'probably receive a second chest pulse', thus implying that sequences of V:V may represent disyllabic V:-V (EPG: 97).

Class 1 (short):	Vj, Vw	*taigh* /təj/, *crodh* /krəw/
Class 2 (abrupt):	VV	*buidhe* /bui/, *cathadh* /kau/
Class 3 (smooth):	V·V	*dòigh* /dɔ·i/, *oidhche* /ə·ix'/
Class 4 (long):	V:V	*sgrìobhadh* /sgri:u/, *bràighe* /bra:i/

Class 1 diphthongs share the characteristics of being very short and having weakly voiced closing glides. Their overall duration is roughly the same as short vowel nuclei. Class 2 diphthongs, though similar in duration to class 1, all have voiced closing glides; central gliding diphthongs of this class tend to have nuclei which are longer than short simple nuclei but shorter than long simple nuclei. Class 3 diphthongs are long in duration, approximately equal in length to long simple vowels; they are distinguished from class 2 by having a more gradual movement from initial to closing position. Class 4 diphthongs contain long nuclei followed by glides. I have only considered the long component of class 4 diphthongs as relevant for the purposes of the present study. In other words in sequences like /i:u/, /ɛ·ia/, I consider as relevant only the vocalic elements /i:/ and /ɛ·i/ respectively. Finally, Ó Murchú's /əə/ sequences are here represented by /ɤə/. I have used the symbol /a/ instead of Ó Murchú's /ɑ/.

ESG

Dorian (ESG: 59), in her discussion of vowel length and 'hiatus', notes that 'the situation which does exist in ESG is so untidy as to suggest that some earlier, tidier system may be present in decay or transition'. This has obvious implications for the analysis of vowel sequences in this dialect. Dorian (ESG: 61-2) classifies sequences of two-vowel sequences into two classes. She states that 'both short and long vowels combine with vowels of different quality in sequences which fall into one of two patterns: (a) short or long monophthong plus /i/ or /u/ . . . (b) short or long monophthong plus /a/ or /ə/'. Class (a) diphthongs are represented variously as VV_1, VV_1:, V:V_1 sequences, where V_1 = /i u/; class (b) as VV_1, V:V_1, where V_1 = /a ə/. We are told that sequences of type VV, VV: in class (a) are monosyllabic, the final vocalic element being an off-glide (ESG: 62); V:V sequences on the other hand are bisyllabic. All sequences in class (b) are bisyllabic.

The notation adopted by Dorian is at first sight misleading and requires some comment. This point may be illustrated with the three diphthongs /əi/, /əi:/, and /ə:i/ of class (a). According to the above, both /əi/ and /əi:/ are monosyllabic and contain the off-glide /i/. The length mark (colon) in the case of /əi:/ therefore refers not to the final vocalic element but to the initial part of the nucleus, i.e. /ə/; phonetically we might write [ə:i]. However, this symbolisation would clash with /ə:i/ which is used to

denote a bisyllabic sequence [ə:i] of class (b), as we have seen. The confusion arises because Dorian regrettably does not signify syllable boundaries in her notation, despite being able to 'perceive' them. In any case, it is important to note that sequences of the type VV: (class (a)) are differentiated from sequences of the type VV (class (a)) on the one hand by being longer in duration and from all other sequences by being monosyllabic. In disyllabic (and trisyllabic) vowel sequences, I have only concerned myself with the diphthongs which may be associated with the first syllable. This means that I have usually ignored the second part of vowel sequences of type VV in class (b). In other words I take the reflex of historical //o// in ESG *foghmhar* /fɤar/ to be /ɤ/ rather than /ɤa/. Similarly, in vowel sequences containing more than 2 consecutive vowel symbols, I have only considered the first two vowel symbols as relevant to the present study, e.g. **tobhan* /t^{h}ɤuan/, **taigheach* /t^{h}ɤiax/.[112]

Section C
Nasalised vowels in Irish and ScG

Phonemic nasalised vowels may have been a feature of CG but at the present state of knowledge there can be no certainty with regard to this matter. In particular, we have no way of knowing if there was a contrast between nasal and oral vowels in nasal consonantal environments; the orthography of the older language does not indicate that such was the case. Whatever our interpretation of historical *vowel + mh* sequences may be, it is clear that the incidence of phonemic nasalised vowels would have increased greatly with the vocalisation of certain word internal nasal consonants, particularly nasal labial fricatives, and the change of initial Cn clusters to Cr clusters.[113] This may be illustrated by the following pairs:

	abhras	**amhras**
Common Gaelic	/avrəs/	/aṽrəs/
Reduction of /v, ṽ/	/aurəs/	/ãũrəs/
	cró	**cnó**
Common Gaelic	/kro:/	/kno:/
CN > Cr	/kro:/	/krõ:/

[112]For Dorian's analysis of VVV(V) sequences, see ESG: 62.
[113]Cf. Hamp (1956: 294).

Phonemic nasal vowels are common in modern ScG (see MacAulay 1992: 232; Ternes 1983: 102) but are, on the whole, less common in Irish. See Sommerfelt (1922: 153), IWM: 54-6; IR: 61-2; ICF: 46; IT: 58-9; IE: 48.[114] There is evidence to suggest that full systems of phonemic nasal vowels existed in Irish dialects until the latter end of the nineteenth century and into the beginning of the present century when they began to be 'merged' with oral vowels. Monograph studies of Irish dialects from the 1920s onwards frequently note that nasal vowels were more common with older rather than with younger speakers. See Sommerfelt (1922: 153), IWM: 54-5; IT: 58; Ó Dochartaigh (1992: 88). For the most detailed analysis to date of intergenerational depletion of phonemic nasalisation, see Ó Curnáin (1994: s.v. Nasalisation). In Irish, vowels may be nasalised (to varying degrees) phonetically in the environment of nasal consonants and as such are predictable by their occurrence. However, nasalisation also occurs in words which do not contain nasal consonantal segments. Many commentators conclude incorrectly that nasalisation is not a significant contrastive feature of Irish dialects. Ó Curnáin (1996) shows that nasalisation is a significant feature of the vowel system of Carna, Co. Galway. Where phonemic nasal vowels do occur in our monograph studies of Irish dialects, it is clear that they tend to survive with older rather than younger speakers.[115]

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[114]Quiggin does not discuss nasal vowels in his monograph on the dialect of Mín an Bhainne (DD).

[115]Nasal vowels occur in words where we might not expect them historically, i.e. they can occur in words not deriving from //Vṽ, CnV// syllables. Such instances frequently occur in stressed syllables of original shape VC[–voice], particularly when V is a long vowel, e.g. *áit* (ICF), *áth* (ICF), *oíche* (IWM) etc. Cf. ScG *oidhche, f(h)aic* etc. The nasalisation in such cases can in most cases be explained as deriving from a preceding proclitic nasal, e.g. *an áit*. Professor E. Hamp suggests that nasalisation in *oidhche* may originally have spread 'back' from a following *mhath* 'in the nexus *oidhche mhath*'. See Hamp (1986: 138-41).

Nasalised vowels in ScG

Ternes (1983: 102) notes that 'unlike Irish, in which nasalization is gradually disappearing, nasalization is one of the most prominent features of Scottish Gaelic phonetics'. His succinct summary remarks on nasalisation in ScG are useful and worth quoting here in full:

> Nasalization is phonemically distinctive in all Scottish Gaelic dialects. The number of vowels affected varies from one dialect to another. In some dialects (e.g. Oftedal 1956; Dorian 1978), each oral vowel has a nasalized counterpart (i.e. /ĩ, ẽ, ɛ̃, ã, ɔ̃, õ, ũ, ɯ̃, ɤ̃/), both long and short. In most dialects, however, the set of nasalized vowels is somewhat reduced. The most common pattern shows exemption from nasalization for all half-close vowels (e.g. Borgstrøm 1940, 1941; Ternes 1973); thus one finds /ĩ, ɛ̃, ã, ɔ̃, ũ, ɯ̃/ both long and short, but long and short /e, o, ɤ/ are without nasalized counterparts. Nasalization is distinctive both adjacent and non-adjacent to nasal consonants. The phonetic quality of nasalized vowels, including allophonic variation, is the same as for oral vowels. (Ternes 1983: 102)[116]

Borgstrøm's treatment of nasality in terms of dependent and independent nasality (DOH: 13) has been seriously questioned and dismissed by Oftedal and Ternes. According to Borgstrøm, nasal vowels in the environment of nasal consonants were 'dependent' on their environment, thus implying nasal vowels in ScG were non-phonemic. Consequently the nasality of such vowels was not indicated in Borgstrøm's transcriptions. Oftedal (1956: 40) was the first to point out that nasalisation could in fact be distinctive in the environment of nasal consonants, e.g. *sgian* /sg'iən/ ~ *lìon* /L'ĩən/. Cf. *muir* /mur'/ ~ *muin* /mũN'/ (GL). Oftedal's observations for GL are supported also by Ternes (1973) and Dorian (ESG). Indeed Ternes (1973: 123-7) has argued that Borgstrøm's treatment of nasality is in all probability 'not correct for any Sc.G. dialect'. This discrepancy between Borgstrøm's notation and later accounts of ScG dialects (including EPG: 80-82), and also the inconsistency[117] with which nasality is marked in the case of Holmer's accounts of GK and GA, means that it is not possible to usefully compare the incidence of nasalised vowels in nasal environments in all dialects selected for the present study.[118] This has not proved problematic for the present study since the main focus of this thesis is to trace the

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[116]Ternes (1973: 123-142) upon which the above summary is based, is the fullest account to date of the phonemic interpretation of nasalised vowels in ScG. For a different phonemic interpretation of nasalised vowels in ScG in terms of a 'long nasal component' or a 'nasalised stretch', see Ternes (1973: 133-142). It is not entirely correct to say that 'the phonetic quality of nasalised vowels, including allophonic variation, is the same as for oral vowels' as there may be some allophonic variation in nasal environments. See GL: 64.

[117]'Inconsistency' may be misleading here since Holmer's transcriptions may well reflect the facultative rather than categorical occurrence of nasalisation in these dialects as in ESG, EPG.

[118]Cf. *coimheach* /kõjax/ (GA: 35) ~ /kɔ·jax/ (GA: 38).

major changes in vowel quality. Appendix 6 provides a discussion of the incidence of nasalised vowels in nasal and non-nasal environments in GL and ESG.

On the nasalisation of vowels, the monographs have the following to say:

> Any stressed vowel or diphthong, short or long, may be nasal . . . or oral, except long *ɔ:* and *ɯ:*, which are never nasal. Long *e:* is nasal only in *N'ẽ:*. (GL: 40)

> The vowels *o*, *ɤ* and *e* cannot be nasal; diphthongs containing any of these vowels, e.g. [ɤi], [iə] (=[iɤ]), [uə], can never be nasal in Barra; [ɤi] and [iə] can be nasal in Harris, [ɤi] also in some of the other dialects. Words with svarabhakti do not contain nasal vowels. (DOH: 129)

Nasal vowels are:

ũ(:)	*ɯ̃(:)*	*ĩ(:)*
ɔ̃(:)	*ã(:)*	*ẽ(:)*

(SR: 9, 66)

All eight short vowels may occur nasalised (ESG: 57). All seven long vowels may occur nasalised.[119]

Ó Murchú describes the nasal vowels of EPG: 81 as follows: /ĩ ɛ̃ ã ɔ̃ ũ/, /ĩ: ɛ̃: ã: ɔ̃: ũ: ɯ̃:/

We may summarise by listing those vowels which do not occur nasalised:

Vowels which are not nasalised according to dialect				
GL	ɔ:	e(:)		ɯ:
DOH	o(:)	e(:)	ɤ(:)	
SR	o(:)	e(:)	ɤ(:)	
EPG	o(:)	e(:)	ɤ(:)	ɯ

Table 2C.1

This agrees with Ternes' (1983: 102) conclusions quoted above on set of phonemically distinctive nasal vowels in ScG dialects except that we may note in addition a tendency in some peripheral dialects not to have certain nasalised back unround vowels. These conclusions also concur with Crother's (1978: 124) conclusions:

[119]Note that long /ɛ:/ does not occur in ESG.

> The number of of vowels in a nasal vowel system is equal to or smaller than the number in the oral vowel system.

and

> If a nasal vowel system is smaller than the corresponding basic vowel system, it is often a mid vowel (front, back or both) that is missing from the nasal system.

Summary

Our discussion of the synchronic vowel phonology of Irish and ScG dialects provides the following vowel systems for Irish and ScG dialects. Nasalisation occurs only with a subset of these:

Irish (excluding Donegal)		**Donegal**	
Monophthongs:			
i	u	i	u
e	o	e	o
a		a	ɔ
i:	u:	i:	u:
e;	o:	e:	o:
a:		a:	ɔ:

Dipthongs:

/iə/, /uə/, /au/, /ou/ (= /əu/), /ai/, /əi/, /ia/, /əɯ/

Scottish Gaelic
Monophthongs

			ESG			GA, GK		
i	ɯ	u	i		u	i	y	u
e	ɤ	o	e	ɤ	o	e	ø	o
ɛ		ɔ	ɛ		ɔ	ɛ		ɔ
	a			a			a	
i:	ɯ:	u:	i:		u:	i:	y:	u:
e:	ɤ:	o:	e:	ɤ:	o:	e:	ø:	o:
ɛ:		ɔ:	a:		ɔ:		a:	
	a:							

Diphthongs
ScG (excluding EPG, ESG)
/iə/, /ia/, /uə/, /ua/, /ai/, /ɛi/, /ei/, /ɔi/, /ɔi/, /ui/, /ɯi/, /ɤi/, au/, /ɛu/, /ɔu/, /iu/, /iu:/, /eɔ/, /eɔ:/, /ɛɔ:/, /eo/, /eo:/, /eɤ:/, /ia:/, /ia·/, /ua·/, /Ii/, /Uu/

EPG
Class 1: /aj/, /əj/, /ɯj/, /ɛj/, /ɔj/, /əw/, /aw/
Class 2: /ei/, /ɛi/, /ai/, /ɔi/, /oi/, /ui/, /ɯi/, /əi/; /iu/, /ɛu/, /au/, /ɔu/, /ou/, /əu/, /au/, /ɔu/; /iə/, /ɛə/, /eə/, /aə/, /ɔə/, /oə/, /uə/, /ɯə/, /ɤə/,[120] /ia/, /ɛa/, /ɔa/, /oa/, /ua/
Class 3: /ɛ·i/, /a·i/, /ɔ·i/, /u·i/, /ɯ·i/, /ə·i/, /a·u/, /ɔ·u/, /i·ə/, /u·ə/, /i·a/, /u·a/

ESG
/ei/, /əi/, /ai/, /ui/, /oi/, /ɔi/, /eu/, /əu/, /au/, /iu/, /ɔu/,
/ei:/, /əi:/, (/ai:/), /ɔi:/, /au:/, (/ɔu:/)

[120]For EPG /əə/.

Chapter 3

Section A
Development of //a// in Irish

//a//, C ≠ F[+voice], SON#\+C[+hom]

Original //a// has been retained on the whole in Irish dialects in all environments other than before original fricatives and long sonorants (in certain environments). Munster dialects with forward stress reduce original stressed //a// to /ə/ / __ C or /i/ / __ C' in pretonic position, i.e. in words whose second syllables are 'heavy'.[1] In some instances the pretonic vowel is lost altogether, e.g. *biorán* /b'ra:n/ IWM: 105. This development appears to be reflected in most Connacht dialects where original //a// is realised as /u/ (or /i/) when the second syllable contains either of the long vowels /a:/ or /o:/. Connacht dialects differ, however, from Munster dialects in that the stress in such cases usually remains on the first syllable.[2] The development //a// > /u/, /i/ in such cases may represent a re-stressing of pretonic /ə/ which would argue that forward stress similar to that found in Munster dialects may have been more widespread than it is at present.[3] This may be illustrated by the following example:

macánta //maca:Ntə// → /mə'ka:Ntə/ forward stress
→ /muka:Ntə/ initial stress replaced.[4]

The positing of an intermediary stage of forward stress in such instances is of course uncecessary in order to explain the development. It is significant that the change in question only applies if the second syllable contains the long vowels /a:/ and /o:/ in Connacht dialects. It does not apply when any other long vowels (/i: e: u:/) are present. This would suggest that the Connacht (and Munster) development is to be explained as being due to the relatively heavier sonority of certain second syllables. One possible explanation for this would be that /a:/ and /o:/, being the most sonorant of the long vowels, were more likely to attract the primary stress than the relatively less sonorant long vowels /i: e: u:/, thus arguing for forward stress on a more limited scale in Connacht dialects than in Munster. Alternatively, the relatively high sonority

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[1]'Heavy' syllables contain long vowels or /ax/.
[2]'Forward stress' does occur in Connacht dialects in words containing /a:/ or /o:/ preceded by /r/ or /l/, see ICF §479, IT §435, IE §312. See also O'Rahilly (1932: 99 ff.) and also O Sé (1989).
[3]Forward stress existed in east Connacht, see Ó Sé (1989) for details.
[4]O'Rahilly offered a slightly different explanation for the Connacht development. He states that 'Connacht Irish has, as a rule, borrowed the weakened vowel from the South, while retaining the stress on the first syllable' (O'Rahilly 1932: 99). Cf. Ó Sé (1989: 155).

of syllables containg /a: o:/ may have caused a concomitant reduction of sonority in preceding syllables without loss of stress necessarily. The latter suggestion argues for the retention of original initial word stress and explains the raising of //a// to /u/, /i/ as a compensatory reduction of sonority. It is interesting to note that the change //a// > /u/, /i/ occurs generally in Connacht dialects when the second syllable contains /a:/ but occurs only in mid and southern Connacht dialects when the second syllable contains /o:/.

There is clearly an implicational relationship between the variables V: = /a: o:/ for the raising of //a// which may be expressed as /o:/ ⇒ /a:/. In other words if raising to /u/, /i/ occurs in a particular dialect when the second syllable contains /o:/, then it will also occur when the second syllable contains /a:/. This implicational relationship for Connacht dialects may be expressed in the following scalogram:

	Raising of //a// to /u/, /i/ before:	
Dialect	a:	o:
IE	+	-
IT, ICF	+	+

Table 3A.1

In other words the change //a// > /u/, /i/ in Connacht dialects is most widespread in words which contain /a:/ in the immediately following syllable. This suggests the possibility that forward stress in Munster dialects may have originated in words whose second syllables contained a relatively high sonority and spread to words whose second syllables contained less sonorant syllables.

Raising of //a//

A significant development of //a// has been its raising before certain palatals in a distinct word class in all Irish dialects. The main outcome of raising has been slightly different in all three main dialect areas:

//a//	→	/i/	Donegal, Munster
		/e/	Connacht

It has hitherto been assumed that all instances of raised //a// involved an intermediate stage whereby partial merger with //o// occurred, and that the subsequent development of raised //a// followed that of //o//, e.g. Donegal and Munster /i/ < /o/ <

//a// in *gaid*. It is our view that such a merger did not in fact take place. We argue rather that the development of raised //a//, here symbolised by */o/, is best described in terms of a near-merger with //o//. We claim that in the majority of cases //a// was raised along a different path past the position occupied by original //o// without merging with it.

We now discuss the main developments of the word class of raised //a//.

(a) //a// > /e/

The change //a// to /e/ / C __ C' is more common in Connacht than in either Munster or Donegal dialects as tables 3A.2-4 below show. Raising to /o/ also occurs in Connacht and Donegal dialects but it is less common than raising to /e/. It is possible to categorise the words which illustrate this development into three groups as follows:

(1) # __ C' C' = [+coronal] for most examples, e.g.
air, aige, (aileán),[5] *aile, aileamhain, aideachas*

(2) C __ C' C = [–velarised] (i.e. /t d s r/; see chapter 1), C' = [+ coronal] mostly e.g. *sair, saidhbhir, traigh*[6] (Connacht dialects especially)

(3) C __ C' mostly C = [+velar], C' = [+coronal] but also following certain velarised consonants, e.g.
caileach, cair, gairm, gaid, gaile, gairid; traigh, laigh

It has not previously been noted that C' in almost all words which illustrate the development //a// > /e/ share the features [+coronal] [+voice] and include /l' r' d'/ but apparently not /L' N'/. It is also significant that the development is common throughout Irish dialects in words containing absolute initial //a//. In this respect, the development of *sair* may have been influenced by *an-air* with 'initial' *a-*. The change is also common following /s/ in *saidhbhir* in all Irish dialects.[7] In Connacht dialects the change //a// > /e/, which corresponds to the change //a// > /i/ in Munster and Donegal dialects, is particularly common following the velar stops /k g/.

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[5]The development of //a// in *aileán* is obscured by the forward stress and subsequent destressing of //a// in Munster dialects. *Aileán* /i/ in ICF may well represent the restressing of /ə/ or /i/. See above.
[6]But *traigh* /i/ IWM.
[7]However, raising of //a// to /e/ in *saidhbhir* may represent a later and different type of raising, see below.

(1) # __ C'

	IWM	IR	ICF	IT	IE	DD	TY
aileamhain	e (PRT)	--	e	--	--	e	(i)[8]
ailte	i	--	e	--	--	--	--
aileán	i (PRT)	i (PRT)	i[9]	i	i[10]	e	i, (o)[11]
ailithreach	e	--	--	--	--	--	--
aile	e	e	e	e	e	e	e
aideachas	i (PRT)	--	--	e	e[12]	e[13]	i, e[14]
aireachtas	--	--	--	--	--	e	--

Table 3A.2

(2) C __ C'

	IWM	IR	ICF	IT	IE	DD	TY
sair	i	i	e	e	e	e[15]	e, i, o[16]
saidhbhir	e	e	e	e	e	e, e:	e:
traigh	i	e	o[17]	e	e	--	i[18]

Table 3A.3

(3) C __ C'

	IWM	IR	ICF	IT	IE	DD	TY[19]
caileach	i (PRT)	--	e, o	e	e, o	--	o
cainneal	i	i	i	i	i	i	i
cair	--	--	i	e	--	i	i
gairm	--	--	e, o	--	e	i	--
gaid	i	i	e, o	e	e	i	o, i
gaile	i	i	e, o	e	--	--	a, o
gairid	a	a	a, e, (o?)	a	a	e	o, i
baile[20]	i	i	i	--	(i?)	(i?)	--

Table 3A.4

Some instances of //a// > /e/, particularly in Munster and Ulster dialects in the environments #, s __ C', where the development //a// > /i/ is more common, may represent a later raising of //a// in the prepalatal position, e.g. *saidhbhir*.

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[8]*oileadh* 'condition' etc.
[9]*an t-aileán* / ət' il'a:N/ GCF: 174.
[10]*an t-aileán* /əN' t'il'a:n/. IE: 166.
[11]/o/ in place-name *Oileán Dubhaiche* (TY: 307).
[12]*aideas*.
[13]*aideas*.
[14]/i/ *oideachas*; /e/ *oideas*.
[15]/s'er'/, DD: 121.
[16]/o/, phonetically [ə].
[17]In this case, it is not clear if /o/ represents the original result of the raising of //a//. It is possible thta /o/ represents a secondary retraction of /e/ in final position following /tr/ when /j/ (< //ɣ'//) had been lost. The plural forms of *traigh* in ICF suggest an underlying /e/: *traighthe* /tre:/.
[18]*traighthe* (pl).
[19]All words in this table which have /o/ in Tory occur with the raised and fronted allophone [ö] which is quite close to members of the /i/ phoneme.
[20]'madness'.

Instances of /a/~/e/ variation in Old Irish are, according to Thurneysen (GOI: 53-5) and O'Brien (1956: 182-4), not to be taken as evidence for the change //a// > /e/ in the prepalatal environment. Thurneysen (GOI: 308), referring to Old Irish *éle* with /e:/ for *aile* by analogy with *céle*, explains *aile* > *eile* as being due to the contamination between *aile* and *éle*. Thurneysen also explains the development //a// > /e/ in *eilithri* for **ailithri* in the Milan glosses as being due to *eile* or a contamination of *aile* and *éle*. If Thurneysen is correct, we cannot talk in terms of a general, if restricted, phonological rule //a// > /e/ as early as the Old Irish period. Breatnach (1994: 232), however, provides a small number of instances of the change //a// > /e/ which is particularly common in absolute initial position before the segments //r' l'//, from the Middle Irish period, e.g. *heire* < *aire, ere* < *aire, erechas* < *aireachas, ele* < *aile, tespénad* < *taispénad*. These examples point unambiguously towards an /e/ realisation although it is not clear if this development involved any of the intermediate developments //a// > /o/ or */o/, on which see below.

(b) //a// > /i/[21]

Once again it is significant that the change //a// > /i/ occurs frequently before the palatalised apicals //l' r' d'//. This alone suggests that both developments //a// > /e/ and //a// > /i/ are closely related and represent different outcomes of a fronting tendency common in Irish dialects. The change //a// > /i/ is more common in Munster and Donegal than in Connacht dialects although it is attested marginally in Connacht, notably in the words *cainneal, aileán, cair, baile* ('madness'). In the case of *cainneal*, raising to /i/ could be due to the following nasal environment. This would apply to all dialects in the case of *cainneal*. In the case of *aileán*, /i/ is the regular outcome of //a// in Connacht dialects in words whose second syllables contain long /a:/ as we have seen. This also applies to Munster dialects. It is interesting to note that *aileán* is realised as /e/ rather than /i/ in some Donegal dialects (DD).[22] The occurrence of /i/ in *baile* and *cair* (ICF) in most Connacht dialects is strange, where we might otherwise expect /e/. The development //a// > /i/ in Munster dialects in words containing *-ach(-)* in the second syllable can be explained as being due to the destressing of original //a// preceding syllables containing *-ach*(-) e.g. *aideachas, aireachtas, caileach*. However,

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[21]This change may be as old as the beginning of the thirteenth century in Ulster at least. The placename *Aireadh* (later *Oireadh*) in Co. Antrim 'is spelled "Irewe" in an English document of 1215, and "Irve" in another of 1306'. IDPP: 266.

[22]But cf. /i/ *oileán* (TY) but /o/ in the place-name *Oileán Dubhaiche* (?) (TY: 307).

the remaining examples of //a// > /i/ in Munster and Ulster dialects cannot all be explained as being due to nasal raising or to destressing.

It is generally held that the developments //a// > /e/ and //a// > /i/ involved the intermediary stage of //a// > /o/. This is implicit in the sections on 'Historical Development' in most Irish dialect monographs and has no doubt been inferred from (a) the attestation of *oi* spellings in Irish sources from the Middle Irish period onwards, and (b) the shared developments of //a// in the word class {//a// > /e/, /i/, /o/} with original //o// in southern Irish dialects. The acceptance of an intermediate development //a// > /o/ tacitly assumes that //a// merged with original //o// in such cases. This received assumption has not to my knowledge been questioned to date. What follows is an attempt to assess the evidence for an intermediate stage //a// > /o/, merging with original //o//, having occurred as an intermediate stage in the developments //a// > /e/, /i/.

The evidence for assuming an intermediate stage //a// > /o/ may be summed up as follows:

(i) *oi* spellings in the historical record, e.g. *oileamhain, oilte, oileán, troigh, coileach, goile* etc. It is significant that all words, with the exception of *saidhbhir*, listed in tables 3A.2-4 above are attested in the historical record with *oi* spellings, and indeed are the current spellings in Modern Irish. The exceptional nature of *saidhbhir* in this way may imply that the raising in this word is the result of a later raising of fronted allophones of //a//.

(ii) The occurrence of /ɔ:/, /o/, /o:/ in some dialects in words with original //a//. Examples include *an airthear* 'the day after tomorrow' /ɔ:/ (DD, TY);[23] *airnéis* 'furniture' /o/ (DD); *airde* 'height, higher' /o/ (IT, IE, DD); *sair* 'eastwards' /o/ (~/e/, /i/) (TY); *caileach* 'cock' /o/ (~/e/) (ICF, IE), /o/ (TY); *gairm* 'call' /o/ (~/e/) (ICF), *gaid* 'rob' /o/ (~/e/) (ICF), /o/ (~/i/) (TY), *gaile* 'appetite etc.' /o/ (~/e/) (ICF), /o/ (~/a/) (TY), *gairid* 'short' /o/ (~/a/, /e/) (ICF), /o/ (~/i/) (TY).

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[23]The forms are /ə Nɔ:rhi:r'/ DD: 143; /ə Nɔ:r'hi/, /ə nɔ:r'hir'/ TY: 236 s.v. *anóirthir*. The long /i:/ in DD has perhaps come about as a result of contamination with the word final ending /i/ noted in other adverbs, such as *anuraidh* for instance. I have also heard a final unstressed ahistorical long /i:/ in *maidin* in some Donegal dialects. For an instance of *maidín* in literary sources, perhaps representing a later borrowing of Latin *matínus*, see DIL s.v. *maitín*.

(iii) The shared developments of //a// in the word class {//a// > /e/, /i/, /o/} with original //o// in southern Irish dialects.

Against these three points, the following may be said. Regarding (i), instances of *oi* spellings for original //a// do not in themselves necessarily imply that //a// merged with //o//. It is possible that *oi* in such instances may have represented a different vowel quality which contrasted either phonemically or subphonemically with reflexes of original //o//. Indeed we shall see in our discussion that there is some evidence to suggest that instances of raised //a// were differentiated from reflexes of original //o// in northern dialects at least.

_oi_ spellings for original //a// / __ C'

There is much evidence in the historical record for the raising of original //a// in the prepalatal environment. Such raised vowels are frequently represented by the digraph *oi*. Such a representation provides some evidence for the non-front quality of //a// at the time of raising in the prepalatal environment, although in some cases it might imply raising to /e/, but only once //o// had been fronted to /e/ before palatals. The representation of //a// / __ C' by *oi* is attested from the Old Irish period but usually only following labial segments, especially in inflected forms of nouns, see GOI: 50, O'Rahilly (1946: 151-3) e.g. *marb* > *moirb* (pl), *ball* > *boill* (pl). Breatnach (1994: 232) notes some examples from the Middle Irish period but adds that examples are not plentiful, e.g. *oitte* (pl of *aided*), *m'oite* < *aite, oidche* < *aidche, *Oilill* < *Ailill*.[24] His examples consist mainly of words with initial //a//. McManus (1994: 345) provides some further instances from Classical Irish sources. Significantly the majority of his examples also include words with vocalic onsets, e.g. *oig(dhe)* < *aicde, oidhche* < *aidchi, oidheadh* < *aided, oile* < *aile, Oilill* < *Ailill, oirfideadh* < *airfitiud, oide* < *aite*. However, he also includes the examples *coill, cloidheamh, coinneall, goiridh, roinn, toigh(e), troigh, loigh* which would seem to suggest that the domain of the rule //a// > *oi* had spread from the post-labial and absolute onset positions to other environments since the Old Irish period. Of course, oblique forms in his list are not necessarily indicative of a phonetically motivated change //a// > /o/. In many cases we presumably have to deal with morpho-phonemic patterning, e.g. *rann* > *roinn, tech* > *taigh, toigh* (based on *magh* > *maigh, moigh*, see GOI: 216). McManus implies that the change from Old Irish *said-* to Classical Irish *suidh-* is yet another example of the change //a// > /o/ which was subsequently raised to /i/ (/u/?). The Classical forms

[24] *Oi* is here implied from the rhyme *Ailill: sobind.*

could, however, derive from the originally causative root *suidh-* which contained //u//, see GOI: 336. It is surely significant that this verb, so far as I am aware, is never attested as **soidh-* unlike *laigh-* which occurs as both *loigh-, luigh-* even in the Classical period. Furthermore, there are no mid vowel realisations in Gaelic dialects which would support a form **soidh-*, particularly in Connacht dialects where we might expect them according to the pattern in tables 3A.2-4 above. The case of *suidh-* highlights the importance of considering synchronic dialectal forms for a complete understanding of historical developments in individual cases.

The historical evidence would seem to imply that the development //a// > *oi* (however we interpret *oi* spellings) first occurred following labial segments.[25] It is unclear if this development was a phonetic one or one modelled on the paradigmatic pattern //a// ~ //o//. It seems to have spread from here to words with vocalic onsets, perhaps in some cases due to analogy with words with initial *f-*, where lenited forms *fh-* would have given the semblance of a rule //a// > *oi* in word initial position. The development appears to have spread later, although when is unclear, to include words with initial velar segments /k g (x)[26] (ɣ)/ (e.g. *gaid* etc) and initial velarised segments (e.g. *laigh*). The historical record would seem to suggest three stages in the development //a// > *oi*:[27]

(1) //a// > *oi* / C[+labial] __
(2) //a// > *oi* / # __ C'
(3) //a// > *oi* / g, k, L __ C'

Regarding (ii), in those dialects where there is a synchronic phonemic difference between /o/ and /ɔ/ (i.e. Donegal), a contrast exists between the word class {//a// > */o/} and {//o//}, as the following table illustrates:

[25]It is likely that instances of //a// > *oi* following labials represent *bone fide* examples of partial merger of //a// and //o//, see section D below.
[26]Cf. *chaidhche* which rhymes with *foirthe* in a Middle Irish source, Breatnach (1994: 232).
[27]Perhaps based on //a// ~ //o// morpho-phonemic varation in some cases.

//a//		//o//	
gairid	/e/ DD; /o/, /i/ TY	goireadh (vn) 'heating'	/ɔ/ DD
cair	/i/ DD, TY	coire	/ɔ/ TY
gaile	/a/ DD; /a/, /o/ TY	sgoil	/ɔ/ DD; /o/ TY
airead	/or/ DD; /or/, /er/ TY	[f]oir (vb)	/ɔr'/[28]

Table 3A.5

It is significant that /ɔ/, which appears to be the normal reflex of //o// before //r' l'// in Donegal dialects,[29] does not occur in reflexes of the word class {//a// > */o/}. We may also compares reflexes of //a//, */o/ (i.e. raised //a//) and original //o// before rC groups in Donegal dialects.

//a//	→	/a:/	*airne* (DD), *airde*[30]
*/o/	→	/o/	*airnéis* (DD), *airde*[31] (DD)
//o//	→	/ɔ:/	*ord* (DD)

Airde /o/, being an inflected form of *ard*, is not entirely a suitable example since its form could well reflect the morpho-phonemic pattern //a// ~ //o// (e.g. *glan* ~ *gloine* etc) rather than a phonetically or phonologically conditioned raising of //a//. *Airthear* /ɔ:/ in Donegal seems to represent a genuine example of the raising of original //a// to original //o// since the effects of lengthening are the same as for original //o// as seen in *ord* //o// > /ɔ:/. It represents the only example of //a// > /ɔ/ / __ rC' known to me from Donegal. The rounding to //o// may have come about due to the influence of the preceding velarised //N//. It is possible, in the light of the evidence to be adduced presently, that /ɔ:/ in *an airthear* represents a high register pronunciation, perhaps based on spellings with *oi*. A similar suggestion is made for certain lexical items in the discussion of ScG below.

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[28]Phonetically [ɔir'] in *foirim* 'suits'.

[29]Note, however, that /o/ rather than /ɔ/ occurs in some northern Donegal dialects (including TY), especially in disyllabic genitive forms of *scoil*, see LASID IV, Q. 377, 725, 726. The raising in such cases may represent a later development of /ɔ/. Note also /i/ (phonetically [y]) in *goilfidh* (perhaps *guilfidh*?) 'will weep', and *gailfidh* 'will boil' /i/ (phonetically [i]) DD: §232. It is difficult to know what significance to attach to the apparent contrast between [i] and [y] in these words. There is little convincing evidence for a phonemic contrast between these phones. It is possible that we have here an instance of subphonemic variation which serves to distinguish between historically different word classes, cf. Labov (1994: 20).

[30]In phrase *in airde*, DD: 26

[31]'height', DD: 26.

Finally, regarding (iii), the parallel developments of */o/ and //o// do not in themselves necessarily imply that //a// merged with //o//, since the synchronic reflexes could represent later developments or indeed later mergers. That the development of the word classes {//a// >*/o/} and {//o// / __ C'} has not proceeded in parallel is seen in the fact that raising to /i/ is more common in the word class {//a// > */o/} than in {//o// / __ C'}.[32]

Ó Cuív derives /e:rl'əx/ 'slaughter' from *oirleach* through the stage //o// > /e/ (IWM: 123). If correct, this would provide further evidence for the raising of //a// to /o/ since this word contains original //a//, not //o//, see DIL s.v. *airlech*. If *éirleach* is to be explained as deriving from /o/ > /e/ > /e:/, then its form is difficult to reconcile with the development witnessed in *airde* /i:/, for it would suggest two different developments of /o/ before palatal *r* clusters in this dialect, namely /o/ > /e/ and /o/ > /i/ prior to the lengthening of short vowels before rC' groups.[33] We have seen that modern reflexes of oblique *airde* are likely to derive from /o/, based on the morpho-phonemic pattern //a// ~ //o//. This would imply that /o/ > /i/ (> /i:/) would be the expected development of /o/ before rC'[+voice] groups. We cannot, however, discount the possibility that *éirleach* may derive directly from *airleach* by fronting of //a// to /e/ without having passed through the intermediate stage of //a// > /o/, see below. However, the editors of DIL regard *éirleach* as 'a late form of *airlech'*, s.v. *éirlech,*[34] thus implying that //a// > /o/ evidenced in the form *oirleach* was the earlier development. It is quite possible on the other hand that *éirleach* may have developed early from *airleach* but is only attested in later sources.

We have shown that the evidence for assuming a partial merger between //a// and //o// is at the very least questionable. The strongest argument against such a merger is the continuing contrast between the word classes {//a// > */o/} and {//o//} in Donegal dialects. That this was also the case in other Irish dialects must remain a possibility. However, this information is likely to remain irrecoverable to us because of the subsequent (?) almost parallel development of //a// and //o// in the prepalatal environment in these dialects.

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[32]That fronting to /i/ occurs more commonly in words containing //a// than //o// is implied by Ó Cuív when he says that 'in most words *oi* has become *ui* > **i** . . . . This occurs especially when Ear. Mod. Irish *oi* represents an earlier (Mid. Irish) *ai'* (IWM: 103).

[33]Although the lengthening of short vowels before //R// seems to be early and widespread, we cannot assume that the lengthening of short vowels before rC(') groups occurred as early. Cf. *co-mard, io-mard* (with stress on final syllables) with /a/ IWM: 122.

[34]Dáibhí Ó Bruadair interestingly has both forms /o:/ and /e:/ of *airleach*. See *airm óirleachais* DIL s.v. *airlechas*; *éirlech* DIL s.v. *éirlech*.

We note from table 3A.5 that reflexes of raised //a// tend on the whole to be higher than reflexes of original //o// in the environments / __ r' l', in Donegal. It follows that original //a// was raised past the position occupied by original //o// without merging with it. This suggests that the history of raised //a// is that of a *near-merger*, with raised //a// travelling on an internal non-peripheral path, thus avoiding merger with //o//. On *near-mergers*, see Labov (1994: 20, 384, *et passim*). We shall see below that there is similar evidence in ScG for this type of *near-merger*. This implies the existence of peripheral and non-peripheral paths in the Gaelic phonological vowel space, similar to that which has been documented for Germanic and Baltic languages, see Labov (1994: 388).

We have noted that members of the word class {//a// > */o/} tend to be fronted and raised more frequently than members of the class {//o// / __ C'}. If we accept the existence of a non-peripheral path in the Gaelic vowel space, this implies that there is a greater tendency for vowels in the non-peripheral path to be fronted and raised (to /e/ and /i/) than for vowels in the peripheral path, which relatively speaking tend to remain stable. We have seen that //a// may be classified as a central vowel, it being neither front nor back. This may help explain its development to /e/, /i/ along a central-front rather than peripheral path. The fronting of //o// (and perhaps //u//) may, in such a scenario, be explained as the result of leaving the peripheral track and entering the non-peripheral track.

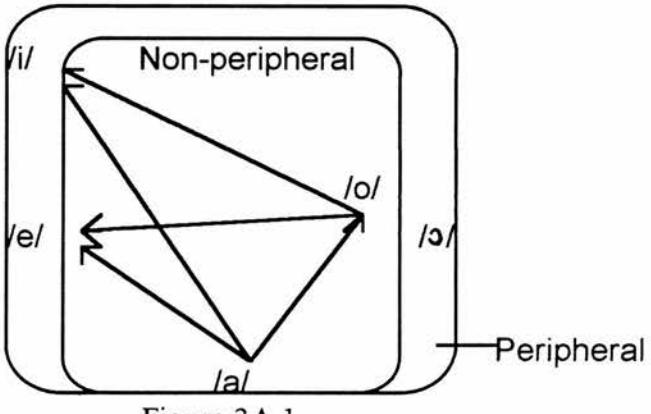

Figure 3A.1

We have argued that certain instances of raised //a//, here symbolised by */o/, did not merge with original //o//. It is unclear what the phonemic status of */o/ may have been. It is possible linguistically that historically different word classes may be differentiated by a non-phonemic feature, see Labov (1994: 20 *et passim*). However,

it is tempting to equate this vowel with Pedersen's (1909: 339-341) additional rounded phoneme /ö/ which he posited in order to explain the orthographic alternations between *au, ai, i, e, u* in words like *laugi, laigiu, lugu* 'smaller', *aurchor, urchor, erchor, irchor* 'shot' etc., see appendix 7. Thurneysen (1946: 52), following Pedersen, suggests that 'we are dealing here with a vowel for which the Irish script had no unambiguous symbol'. It is interesting to note that many of the vocalic alternations of words allegedly containing this rounded phoneme /ö/ in the Old Irish period i.e. *ai, i, e, u* are attested in the modern dialects in reflexes of words belonging to the word class {//a// > */o/}, e.g. //a// > /i/, /e/, /o/. This would imply the following development of Pedersen's /ö/ (= our */o/):

/ö/ > /u/, /o/ / __ r
/ö/ > /e/, /i/ / __ r', l'

We have argued that the fronting to /i/ of //a// may not in all instances have involved the intermediate development //a// > /o/. Given that the normal reflex of //u// before palatal consonants is /i/, the question remains if raising to /i/ of //a// involved the intermediate stage //a// > /u/, with or without the intermediate development //a// > /o/. There is much evidence in the historical record for instances of raised original //a// being represented by the digraph *ui*. The question we must ask ourselves is whether or not such spellings imply an underlying /u/ or /i/. Ó Cuív's (IWM: 103, n. 2) statement that 'already in Ear. Mod. Irish the *ui* (< *oi*) is general in *Muire*, and is a permitted alternative in words like *cuinne, buile, uiread, fuireann*' does not state what value should be given to the *ui* digraph in such instances.

McManus (1994: 346-7) is the only scholar to date to have tackled this problem of interpreting the representation of original //a// as *ui* in the historical sources. He claims, irrespective of the origin of the vowels in question, that variants in Classical Irish involving *ui* and *oi* e.g. *luighe ~ loighe, muileann ~ moileann, buile ~ boile*, rather than representing phonological variants with underlying /u/ and /o/ respectively, were intended to represent realisations with underlying /i/, the graphemes *o* and *u* merely indicating the broad quality of the preceding consonant.[35] It is implicit in McManus' (1994: 346) statement 'gur neartaigh na sleamhnóga . . . *i* in *oi* agus *ui*' that //o// (including instances of raised //a//) was raised and fronted to /i/ without the

[35]It is not clear whether or not such realisations reflect the proper Classical pronunciation as well as the current vernacular pronunciation during the Classical period. In any case, if McManus is correct, this type of variation provides further evidence of gravitation towards Irish linguistic forms with /i/ rather than Scottish forms with /u/ in the composition and pronunciation of the Classical language.

intermediate stage of /u/.[36] It is, however, impossible in individual cases to know whether or not orthographic *ui* (< *oi*) in the Early Modern period represented /u/ or /i/. However, I know of no incontrovertible evidence of the change /o/ > /u/ in the prepalatal position in Irish dialects.[37] This is so because the development of //o// and //u// in the prepalatal position have in many cases developed along parallel lines, both usually yielding /i/ in Munster and Donegal dialects, at least. Leaving aside the odd occurrence of //a// > /i/ in Connacht dialects, e.g. *baile, cair, Maire,* which may imply an intermediate stage of raising to /u/, the general development of //a// > /e/ would seem to rule out the possibility of //a// having been raised to /u/ in Connacht dialects in most instances. It could be further argued that //a// was not raised to /u/ on the grounds that, if it had, we might expect /u:/ as is evidenced in *buird, uird* (IWM) rather than /i:/ in *airde* in Munster dialects. It should be noted that the Donegal evidence is ambiguous since original //u// and raised //a// > */o/ have yielded the same result in some instances. Compare for instance *uird* /o/ (phonetically [o̝]), pl of *ord* with *airde* /o/ (phonetically [o̝]). The Donegal evidence provides yet another possible explanation of *ui* and *oi* variation in Classical Irish. It suggests that original //u// and */o/ may have merged while still being realised as back vowels in some dialects in the prepalatal position. However, the partial merger of //u// and //o// in Donegal dialects has not yet been dated. In conclusion, we have seen that there is little convincing evidence for the development //a// > */o/ > /u/ in Irish dialects. This means that the development //a// > /i/ in Munster and Ulster dialects is best explained as follows:

//a// > */o/ > /i/[38]

There would appear to be a later development in Donegal dialects whereby //a// is raised to /i/ directly, perhaps without the intermediate stage of //a// > */o/, particularly before nasals e.g. *sainnt*. This is more in evidence in TY than in the earlier monographs DD, DT, see section A, s.v. TY above. It is tempting to draw a parallel

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[36]This would appear to be supported by the ScG evidence as we shall see. Despite spellings like *Muire* in ScG, which no doubt stem ultimately from Bedell's Bible, the stressed vowel in this word is usually realised as a non-high vowel: /ɔ/, /o/, /ɤ/, /e/. Dr John MacInnes explains the occasional occurrence of /u/ pronunciations as being due to 'learned' pronunciations of the written form *Muire* (personal communication, 1996). We may also note that *baile* in the phrase *air bhoil* is usually realised as /ɔ/, never as /u/ to my knowledge. Cf. Irish /i/ *buile*.

[37]Unless the anomolous developments //a// > /i/ *baile, cair, Muire* in Connacht dialects are to be explained as having the intermediate development //a// > /o/ > /u/ > /i/.

[38]The possibilty that /e/ < //a// was raised to /i/ does not seem plausible in the majority of cases involving original //a// since /e/ is usually only raised to /i/ in nasal environments. See chapter 4.

between the development //a// > /i/ in Donegal with the 'general picture of increasing palatalisation' noted by Ó Dochartaigh (1987: 159) for Donegal dialects.

Conclusion

The developments //a// > /e/ and /i/ are best explained as follows:

//a// > /e/ OR //a// > */o/ > /e/
//a// > */o/ > /i/

These developments imply a development of //a// along a non-peripheral-front track rather than along a peripheral path //a// > /o/ > /u/ as has been traditionally implied.

The remaining significant minor development involves Donegal dialects which raise original //a// to /ɔ/, particularly before /l/ and /L/. The raising of //a// to /o/ before /g/ is also significant and will be referred to below in the discussion of the development of //a// before the velar fricative /ɣ/.

//a// __ F

The general development of fricatives in Irish has been towards their weakening and vocalisation especially word internally. The vocalisation of fricatives has led to the compensatory lengthening or diphthongisation of preceding short vowels. In cases where an original intervocalic fricative has been vocalised, both preceding and following vowels have coalesced and synchronically belong to the same stressed syllable. So that *gabhar*, originally a disyllable, is realised in most Irish dialects as a monosyllable /gaur/ ICF, /go:r/ DD. In some dialects, the original syllabic structure remains in pausa. See IE: 148 n.1, 153 n. 2.

//a// __ F[+voice] [+labial]

Munster dialects differ from other Irish dialects in that word internal labial fricatives following short vowels are generally lost in the former.[39] In Connacht and Ulster dialects original //v'// and //ṽ'// are always retained as /v'/, the original distinction normally being retained in the nasality of the preceding vowel. Connacht dialects unlike Munster and Ulster dialects tend on the whole to retain original //ṽ// as /v/, the preceding vowel normally being nasalised. All Irish dialects, however, have vocalised original //v// following //a//. This has led to the development of *u*-gliding diphthongs in most Irish dialects, with the exception of Donegal dialects which have /o:/ in such cases. See map 5 (*gabhar*).

Most Irish dialects retain the contrast beween original //av// and //aṽ// in various ways (except in IWM[40] and to a certain extent ICF, where the contrast has in many cases been lost), e.g. *abhainn* /əu/ ~ *Samhain* /au/ IR, *abhainn* /əu/ ~ *samhain* /ãv/ IT, *abhainn* /o:/ ~ *amharc* /au/ DD. The 'minor' development of /ou/ < //av// in some words (e.g. *labhair, gabhar*) in IWM suggests that this dialect may well have maintained a distinction between *u*-gliding diphthongs in former times, similar to that noted in IR. It is possible that the loss of the contrast between original //av// and //aṽ// in IWM and ICF is a fairly recent development.[41]

The difference in development of //av// and //aṽ// is no doubt due to the fact that historically the vocalisation of //v// preceded that of //ṽ//. The survival of /v/ generally in nasalised syllables (mostly deriving from //Vṽ//) in Connacht and the survival of /v/ in *amhrán, amharc* in some Munster dialects would seem to support this suggestion. In those dialects where both //v// and //ṽ// have been vocalised (Munster and Donegal), the difference in treatment of //av// and //aṽ// may be explained in the following ways.

(a) The distinction between /əu/, /o:/ < //av// and /au/ < //aṽ// in most Irish dialects may be due to the nasalisation of the latter which may have blocked the raising of //a// in //aṽ// sequences before or after the vocalisation of the labial fricative. There is good

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[39]Except in *amharc* /avərk/ and *amhrán* /avə'ra:n/ IWM: 40. The development of //av'V// is not clear as there are insufficient examples to illustrate the development. However, words with original *-aidhbh-* > *-aibh-* would imply that the labial fricative was retained in this case, e.g. *saidhbhir* > *saibhir* /sev'ir'/ in most Irish dialects including Munster.

[40]Although both are realised as the diphthong /au/, the distinction is sometimes retained in the nasalisation of the diphthong /au/ < //aṽ//. See *abhras* vs. *amhras* IWM: 54.

[41]See IWM: 30 where Ó Cuív discusses the merger between /au/ and /ou/ 'among the younger speakers'.

evidence in Gaelic dialects generally to suggest a tendancy for //a// as an onset in upgliding diphthongs not to be raised in nasal environments. That *u*-gliding reflexes of //a// before //L// (/au/) and //a// before //v// (/əu/) are contrasted in Munster dialects suggests that the vocalisation of //v// did not result in /au/. If the vocalisation of //v// did involve the intermediate stage of /au/, we would expect all *u*-gliding dipthongs irrespective of origin (including reflexes of //aL//) to have been raised to /əu/. This suggests that the vocalisation of //v// in //av// sequences had the effect of raising //a// to /ə/ or /o/.

O'Rahilly (1932: 51) notes evidence for lengthening and diphthongisation in Munster Irish in English sources from the 16th century. Instances of *-obh-* for *-abh-* in 15th century Irish manuscript sources, are ambiguous since they may represent /ov/ or /ou/ (or /au/) realisations. Such spellings do, however, imply that the development of //a// in such instances is identical to that of //ov//, whatever that may have been.[42] This leads us to the next possibility.

(c) The development of /əu/ (IR, IT, IE) and /o:/ (DD) from //av//, rather than /au/, may be significant since they both reflect exactly the development of //ov//. There are two possible explanations for the parallel development:

> (c1) //a// may have been raised to /o/, thus merging with //o//, before the vocalisation of //v//.
> (c2) reflexes of //av// and //ov// may have merged only after or as a direct result of the vocalisation of //v//.

The first explanation implies a partial merger between //a// and //o// before the vocalisation of /v/ had taken place. One interpretation of ScG forms *gabhar* /go-ər/ is that //a// was raised to /o/ before the vocalisation of //v//. Instances of *gobhar* (< *gabhar*) in rhyme with //o// in Classical Irish provide further evidence for the development //a// > /o/ before the vocalisation of //v// in some instances at least.[43] For the rhyme *odhar: gobhar*, see Knott (1922: 260, §3). We have already noted that

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[42]The earliest examples I have personally noted are from the 15th century MS, the *Liber Flavus Fergusiorum*. References are to lines in Skerrett (1966): *gob(h)* < *gabh* 223, 306, 320, 390, 471, 482; *lob(h)air* < *labhair* 311; *tob(h)airt* < *tabhairt* 325, 472, 510. The doublets *gobha~gabha; cobhair~cabhair* rather than reflecting the change //o// > /a/ may be indicative of the merger of //ov// and //av// following the vocalisation of //v// in common speech.

[43]It could of course be argued that *gobhar* is a learned back formation based on a vernacular form /əu/. For a similar argument involving *oi* and *ui* spellings in Classical Irish representing vernacular /i/, see McManus (1994), discussed above.

instances of *-obh-* spellings for *-abh-* in 15th century manuscripts is inconclusive, especially in prose texts, see O'Rahilly (1932: 178). If this interpretation of the development //av// > /əu/ in Irish dialects is correct, it may imply that the change //a// > /o/ before /v/ may have been more widespread than has been thought to date. In particular, it may have developed in Munster dialects.

Leaving aside Donegal dialects for the moment, we may at this stage summarise the possible developments of //av// in Irish dialects as follows:

(a)

1. //a// > /o/ / __ v	rounding with resultant partial merger of //a// and //o//
2. /ov/ > /ou/ = /əu/	vocalisation of /v/ with resultant diphthongisation

(b)

1. //av// > /aw/	weakening of fricative //v// to approximant /w/
2. /aw/ > /ou/ = /əu/	vocalisation of approximant /w/ with raising and/or rounding of /a/ by assimilation

Donegal dialects

Donegal dialects differ from other Irish dialects in that //av// has two main reflexes, i.e. /au/ and /o:/. This is illustrated in the following table. Note that all words with /o:/ in the following table are realised as monosyllables:

	DD	**TY**
gabhar	o:	o:
gabhal	o:[44]	o:
abhainn	o:	õ:
labhair(t)	o:	o:
tabhair(t)	o:	o:
abhac	[auwək]	--
abhaill	[auwiL']	[auwəL']
fabhair	--	[auər']
cabhail	[auwil]	--
cabhóg[45]	--	[auwɔg]
dabhach/aigh (N sg)	[auwi:]	[auwa]
dabhacha (N pl)	[auwaxi:]	[auahi]
dabhcha (G, sg)	[auxə]	--
fabhra	au	au
slabhradh	au	au

Table 3A.6 //av// > /o:/, /au/

A clear pattern emerges. Prevocalic //av// is monophthongised to /o:/ when //avV// is reduced to a monosyllable, e.g. *gabhar* etc. Otherwise prevocalic //av// is diphthongised to /au/ when //avV// is retained as a disyllable. Preconsonantal //av// is diphthongised to /au/. Where //av// has yielded /o:/ preconsonantally it can always be traced back to an underlying //avV// form, e.g. *gabhlachas* /o:/ 'springing (of a horse)', *Gabhla* (pn, TY), both from *gabhal* /o:/ 'fork, crotch', DD: 18. This distribution between /o:/ and /au/ provides a neat explanation of the development //av// in Donegal dialects. It implies that diphthongisation may have been the original development of all //av// sequences in Donegal. Moreover, it implies that the resulting diphthong was only monophthongised to /o:/ when disyllables containing prevocalic //av// were reduced to monphthongs. The fact that John Hegarty, Quiggin's main informant (born 1831, see DD: 2), pronounced *gabhal* as a disyllable with the diphthong /au/ whereas younger speakers had /o:/ at the turn of the century (DD: 18) would seem to imply that the change /au/ > /o:/ in *gabhal* at least is a development

[44]J. H. (born 1831) has [gauwəl] in *gabhal*.

[45]This word has two meanings in TY: (a) 'ruin, destruction' which is cognate with ScG *cabhag* 'haste', which O'Rahilly (1926: 28) derives from English *havoc*; (b) 'jackdaw, jay' which derives from disyllabic *caóg*, see DIL s.v. *caóg*.

which can be traced to the end of the 19th or to the beginning of the 20th century in the dialect of Mín an Bhainne. It may be inferred that the change //avV/ > /o:/ is relatively recent in Donegal. The development of //av// in Donegal may be described as follows:

(1) //av// → /au/
(2) /au-ə/ → /o:/[46]

We note from the examples in table 3A.6 above that not all /auV/ sequences have been monophthongised in Donegal dialects, e.g. *abhac, abhaill, fabhair, cabhail, cabhóg, dabhach/aigh*. Leaving aside *abhac* for the moment, it is clear that all of these words contain an unstressed vowel other than a central [ə]. We find [i] in *abhaill, fabhair, cabhail*; [i(:)] in *dabhaigh*; [a] in *dabhach*; [ɔ] (or [ɔ:]) in *cabhóg*.[47] Clearly then /au/ followed by /ə/ is the most conducive environment for monophthongisation to /o:/ which is always accompanied by the reduction of disyllables to monosyllables. The retention of /au/ in disyllabic *abhac* is strange when compared with other instances of //avə//. The retention in this case may perhaps be explained as a conservatism, *abhac* being a literary word occurring frequently in folk tales. The retention of disyllables in TY *abhaill, fabhair*, transcribed by Hamilton as [auwəL'] and [fauər'] respectively, may imply that unstressed /ə/ had a more front articulation than is indicated by Hamilton, thus preventing monphthongisation in these cases. The development of //av// sequences in Donegal dialects may be further refined to:

(1) //av// → /au/
(2) /au/ → /o:/ / __ Və(C)

It should be noted, however, that the development //av// to /o:/ in monosyllables but to /au/ in disyllables does not rule out the possibility mentioned above that //a// may have been raised to /o/ before the vocalisation of //v// in some words. If correct, this might imply that disyallabic [owə] sequences were reduced to monosyllabic [o:] prior to the reduction of [awə] in Donegal dialects. We suggest below that the rounding of //a// to /o/ before //v// may have been particularly common in syllables of the shape //avV//, where V was originally [+round]. Examples would include *gabhar, gabhal.* If

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[46]Quiggin sets out the development for a south Donegal dialect as follows: [aw] > [au(w)] > [ou] > [o:] which is similar to that suggested here although we have defined the environment in which this development has taken place.

[47]See chapter 4 where we note that //evə// > /auə/ > /o:/ but /au/ is retained in *deabhaidh* /d'au(w)i:/ 'nagging' DD: 40.

this is accepted it implies an early development of //av// > /ov/ before the vocalisation of //v//, and a later one //av// > /au/ which occurred with the vocalisation of //v//.

It may be relevant that the minor development //av// > /o:/ is attested also in most Connacht dialects, particularly in the words *tabhairt, gabháil* (ICF, IT, IE). The development in such cases may imply that //a// was raised to /o/ before the vocalisation of //v// which resulted in /o:/ in these cases. However, since /əu/ is the normal development of //ov// in Connacht dialects, the development /ov/ > /o:/ in these words is exceptional. It is possible that /o:/ represents the monophthongisation of a *u*-gliding diphthong ([au] or [ou]) in these words as in Donegal. It is not clear if this development occurred in Munster dialects: //a// is frequently dropped in *gabháil* /gva:l'/ (IWM); the vocalism of *tabhairt* is /u:/ in some Munster dialects (e.g. IWM), presumably deriving from the verbal root *tiubhr-*, see IWM: 114, fn 1. See also *tubairt* DIL s.v. *tabairt*. However, *tabhair(t)* is realised as /əu/ in IR (cf. *tabharthas* /ou/ (IWM)), the regular reflex of both //av// and //ov//; this may imply the raising of //a// to /o/ before the vocalisation of //v// in this word. Considering the realisation of *tabhair* etc. in Irish dialects as a whole, there is good evidence to assume that original //a// may have been rounded and raised to //o// before the vocalisation of //v// in this word.[48] This lends further weight to hypothesis (c1) above which claims that original //a// may have been rounded and raised to //o// preceding //v// in some words before the vocalisation of //v// in all major dialect areas in Ireland.[49] However, it is not easy to reconcile the development //av// > /əu/ with //av// > /o:/ (*tabhair, gabháil*; cf. also *amhrán* below) in Connacht dialects, unless /o:/ is a development of /əu/. It may be significant that some of the words for which //a// was raised to //o// before the vocalisation of //v//, contained a round vowel in their second syllable historically. It may be that this rounded vowel had the effect of rounding the stressed vowel //a// to //o//, in which case the development would have been quite early, certainly before the reduction of unstressed short vowels to /ə/. The anomolous development of *tabhair* in Connacht dialects may be due to its frequent occurrence in unstressed position, for instance in the common phrase *tabhair dom* 'give me'.

The realisation of //av'// and //aṽ'// in Munster dialects as /əi/ rather than /ai/[50] may also be significant. Original //ov'// and //oṽ'// are normally realised as /əi/ also in

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[48]We may compare /ə/, /o/ in ScG dialects *tabhair, toir*.
[49]The verb *gabh* is almost invariably realised with /o/ in most Irish dialects.
[50]/ai/ does appear occasionally for //aṽ'// in IWM: 114.

Munster dialects. The parallel development of original //av' avʲ// and //ov' ovʲ// may imply the raising and rounding of //a// to /o/ before the vocalisation of //v' vʲ// had taken place. If correct, we have more evidence for the development //a// > (*)/o/ in prepalatal environments, discussed above. Alternatively, it is possible that the fronted and raised allophones of //a// and the fronted allophones of //o// in the environment __ v', vʲ' gave rise to /əi/ with the vocalisation of the palatalised fricative. Realisations of the first element of the diphthong /əi/ range from [ɛ+] to [ə].[51] For the raising of //a// to /e/ before //v'//, see table A1.A.1 (appendix 1) and 3A.3 above.

Notes on individual words

The etymological origin of modern *amhrán* 'song' is not certain. The following table provides a list of the reflexes of *amhrán* in Irish dialects alongside the expected development for //av// and //avʲ// in individual dialects:

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
amhrán	**ãv**	**əu**	o:	o:	o:	ɔ:	**o:**, uə
//avʲ//	**au**	au	au	ãv	ãv	ãũ	au
//av//	ou	**əu**	au	əu	əu	o:, au	**o:**, au

Table 3A.7

Assuming that this lexical item contains original nasalised //vʲ//, then all of the modern reflexes have developed irregularly from //avʲ//. IWM appears to be the only dialect to record nasality in this word;[52] even in this case, [ãv] is not the expected regular development of //avʲ// in this dialect. The synchronic evidence presented here would seem to imply an underlying *abhrán* or *obhrán* for northern dialects (Connacht[53] and Donegal) and some southern dialects (IR) but an underlying *amhrán* for some Munster dialects, e.g. IWM. If *amhrán* derives from *amra* or *amar* with nasalised //vʲ// (see DIL s.v. *amrán, amra, amar*), the synchronic evidence implies that the nasality in this word may have been lost in many Irish dialects before the vocalisation of //v// since the development //a// > /o:/ is only attested for syllables of the shape //av//, not //avʲ//. The retention of nasality in IWM could well represent a learned high register pronunciation. The loss of nasalisation in *amhrán* could have occurred in the phrase *gabh amhrán* by assimilation between labial fricatives. Alternatively, the nasality, originally present in both syllables, may have been reasssigned to the last syllable, thus

[51]IWM: 27, IR: 23,4 etc.

[52]However, it is not clear if the nasality was heard on the first or second syllable, see IWM: §186.

[53]The regular development of //ov// in Connacht dialects is unclear as there are insufficient examples to establish it. It may well be /o:/. See Chapter 5.

yielding *abhrán*. Cf. *domhain*, chapter 5. The occurrence of /ɔ:/ in *amhrán* (DD) is peculiar, cf. ScG below. We would expect /au/ or /o:/ from *obhrán*, but cf. *amh* /ɔ:/ (TY). It is possible that the development of *amhrán* has been affected by or contaminated with *óráid* 'speech'. This would certainly explain the development //a// > /ɔ:/ in *amhrán* in Donegal (DD). Compare *amhrán* /ɔ:ran/~ *óráid* /ɔ:rad'/ (DD).

//a// __ F[+voice] [+dental]\[+velar]

The vocalisation of //ð ɣ ð' ɣ'// following //a// has resulted variously in the development of *i*-gliding diphthongs or long monophthong vowels. Before the palatals //ð' ɣ'//, diphthongisation, usually to /əi/, is regular in all Irish dialects. In TY, /e:/ occurs for //að'/ɣ'// prevocalically but /ai/ (=/əi/) occurs preconsonantally; /e:/ in such instances may represent a development of /əi/. It may be significant that the development of //að'/ɣ'// parallels that of //oð'/ɣ'// in Irish. There are two possible explanations of the development //að'/ɣ'// > /əi/:

(a) //a// was raised to /o/ or */o/, preceding //ð'/ɣ'// before the vocalisation of //ð'/ɣ'//. We have seen above that there is evidence for the raising of //a// in the prepalatal position in Irish dialects. If correct, we may add the environment __ ð'/ɣ' to those given above for the raising of //a// in the prepalatal environment.

(b) the diphthongal reflexes of //að'/ɣ'// and //oð'/ɣ'// may have merged only after the vocalisation of //ð'/ɣ'//.

Before the non-palatals //ð ɣ//, diphthongisation is the normal development in Munster dialects (usually /əi/), lengthening in Donegal dialects (usually /ɤ:/ or /e:/). However, both developments are attested to varying degrees in most varieties of Irish. Both diphthongisation (/əi/ or /ai/) and lengthening (usually to /a:/) are attested in Connacht dialects. Quiggin (DD: §69) notes that the younger generation substituted [ɛə], [eə], [e:] for the vowel /ɤ:/. The development of /ɤ:/ in Donegal dialects may be compared with the similar devlopment in Scottish Gaelic dialects, see below. Where a phonemic contrast exists between /ai/ and /əi/ (e.g. IWM, IR), it is the latter which invariably occurs for original //að(')// and //aɣ(')//. All monographs use the symbol /əi/ in such instances except ICF which prefers /ai/ as there is no contrast with another *i*-diphthong in this dialect.

The development of //a// before original //ð ɣ// has not been adequately discussed or satisfactorily explained. A thorough investigation of the matter must of necessity distinguish between the development of //að/ɣ// pre-vocalically and pre-consonantally. The following table illustrates the development of //a// preceding (a) prevocalic //ð ɣ// and (b) preconsonantal //ð ɣ//.

	IWM	IR	ICF	IT	IE	DD	TY
V__V							
adharc[54]	əi	əi	ai	əi	əi	ɤ:[55]	e:
gaghar	əi	əi	ai	əi	əi[56]	ɤ:	--
ladhar	əi	əi	ai[57]	--	əi	ɤ:	e:
laghach	a:[58]	--	--	a:	--	ɤ:	e:
maghar	--	--	--	--	--	ɤ:	e:
adhastar	əi	--	--	əi	əi	--	e:
bladhaire	--	--	--	--	--	--	e:
cladhaire	əi	əi	--	--	əi	ɤ:	--
aghaidh	əi	əi[59]	ai	əi	əi	əi[60]	e:
traghan	--	--	--	--	əi	--	--
raghad	əi	əi	--	--	--	--	--
adhaint	--	əi	--	--	--	--	--
adhall[61]	--	--	ai	--	--	--	--
radharc[62]	--	əi	ai	--	əi	ɤ:	--
cadhan	--	--	ai	--	əi[63]	--	e:
adhaltranas	--	--	--	--	--	ɯ:	--
Adhomhnán	--	--	--	--	--	ɯ:	--

[54]See map 6.
[55]Younger generation [eə], DD: 30.
[56]In pausa, disyllabic /gəiər/ occurs, IE: 180, n. 1.
[57]GCF.
[58]Ó Cuív derives from *lághach* which explains the anomolous development in the case of this word in IWM. However, Ulster Irish and all ScG realisations of this word are clearly derivable from *laghach* with //a//.
[59]But /i:/ in phrase *le haghaidh*, IR: 131.
[60][aiə] from younger people also, DD: 64.
[61]*adhall* 'heat in dogs' < *adall* vn of *ad-ella* 'visit'? See DIL s.v. *adall*.
[62]Perhaps from *rodharc*. See DIL s.v. *rodarc*.
[63]In pausa, disyllabic /kəiən/ occurs, IE: 180, f.n. 1.

	IWM	IR	ICF	IT	IE	DD	TY
V__C							
adhbhar	a:~au	əu	a:~au	a:	a:	a:	a:
badhbh(dhún)	əi[64]	--	au[65]	a:[66]	--	--	a:[67]
Sadhbh	--	--	au	əu	əu	a:	a:[68]
fadhb(h)	əi	--	--	--	--	--	--
adhmad[69]	əi	əi	a:	a:	a:	a:	a:
adhlacadh	əi	--	--	a:	--	o[70]	--
adhradh	əi	əi	--	--	a:	iɣ [ïɣ]	--
Maghnas	e:	--	--	--	a:	--	--
Raghnall	--	--	--	--	a:	--	--
cadhnóg	--	--	--	--	--	--	a:
traghnach	--	--	ai	--	--	--	e:
Tadhg	əi[71]	əi[72]	ai	--	əi	ɤ:	e:

Table 3A. 8 //að,ɣ// > /a:/, /əi/ in Irish dialects

It should be clear from this table that we are in a better position to trace the development of //að// in Irish dialects than for //aɣ// since there are so few words attested in the monographs which would illustrate the development of the latter. Four separate developments emerge (i) diphthongisation to /əi/ (or /ai/), (ii) lengthening, with or without raising, to /a:/, /e:/, /ɤ:/, (c) diphthongisation to /au/, (d) raising to /o/, /i/ (Donegal, some instances only). The development of *u*-gliding diphthongs as witnessed in *adhbhar* (IWM, IR, ICF), *Sadhbh* (ICF, IT, IE) and *badhbh* (ICF) may be explained as deriving from **abhar*, **Sabh*, **babh* respectively with reduction of the cluster //ðv// to //v// before the vocalisation of //v// and the subsequent compensatory lengthening or diphthongisation of //a//. If this interpretation is correct, the dental fricative in such instances has had no tangible effect on the development of the vowel //a// and such words are not discussed further here. However, in Munster dialects, particularly, the development *adhbhar* /a:vər/ > /au/ cannot be ruled out. Cf. *námhaid* *//Na:ṽid'// > /naud'/ IWM: 29. The development of //a// > /o/ in DD *adhlacadh* could well be another instance of cluster reduction //ðl// > /l/ without compensatory lengthening of the preceding short vowel.

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[64]*badhbh* 'a scold'.
[65]In the reiterative phrase *badhbh-badhbh* /'bo'bau/ 'bogey', see ICF: 63.
[66]*badhbhdhún* 'enclosure'.
[67]*badhbhdhún* 'enclosure'.
[68]*Sadhbha* /sa:wə/.
[69]See map 7.
[70][o̤lkuw] DD: 26.
[71]The N sg appears to be *Tadhg* with final broad /g/. However, in the examples where the name is transcribed fully, it occurs directly followed by broad velar segments e.g. *Tadhg Crón* IWM: 77, *Tadhg Chobhthaigh* IWM: 116, n. 2. Could it be that *Taidhg* is the Nom. sg. form in this dialect? If it were sandhi in phrases where **Taidhg* was followed by a broad velar segment would regularly result in *Tadhg* with a broad /g/. Cf. the Nom. sg. in IR.
[72]*Taidhg* = N sg IR: 131.

The following discussion concentrates on the developments (i) diphthongisation to /əi/ (or /ai/),[73] (ii) lengthening to /a:/, /e:/, /ɤ:/. The following tables illustrate the percentages for lengthening and diphthongisation in each dialect in the two macro-environments V __ V, V __ C (based on table 3A.8 above).

	IWM	IR	ICF	IT	IE	DD	TY
Total returns	16	12	12	10	16	16	15
əi (ai)	13	11	9	4	10	1	0
%	**81**	**92**	**75**	**40**	**63**	**6**	**0**
V:	3	0	2	5	5	13	15
%	**19**	**0**	**17**	**50**	**31**	**81**	**100**

Table 3A. 9 //að// > /əi/, /V:/

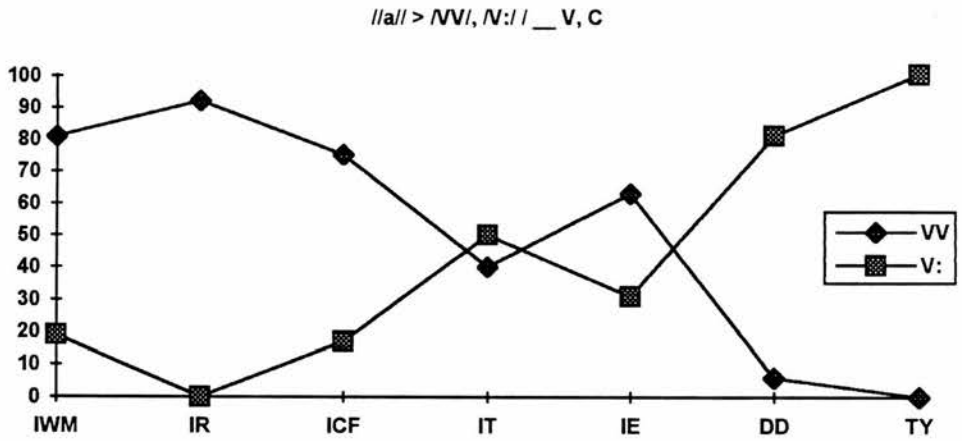

Chart 3A.1

It is clear from chart 3A.1 that diphthongisation is more common in Munster and south Connacht dialects than in Donegal, and lengthening is more common in Donegal dialects. As might be expected, mid and north Connacht dialects appear to be transitional mixed areas. This chart also illustrates that both diphthongisation and lengthening occur in all dialects except IR and TY. A different picture emerges when we consider diphthongisation and lengthening according to the macro-environments V __ V and V __ C separately. Let us first consider the development of //a// before prevocalic //ð/ɣ//.

[73]Instances of diphthongisation to /au/ as seen in *adhbhar* are not included here.

V __ V	IWM	IR	ICF	IT	IE	DD	TY
Total returns	8	8	7	5	9	10	8
əi (ai)	7	8	7	4	9	1	0
%	**88**	**100**	**100**	**80**	**100**	**10**	**0**
V:	1	0	0	1	0	9	8
%	**13**	**0**	**0**	**20**	**0**	**90**	**100**

Table 3A. 10 //að // > /əi/, /V:/ / V __ V

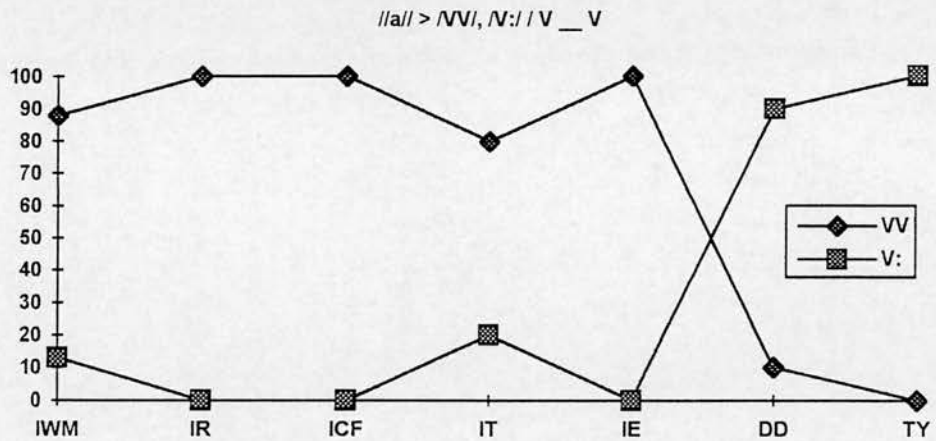

Chart 3A. 2

This chart shows clearly that diphthongisation is by far the most common development in Munster and Connacht dialects when //a// precedes intervocalic //ð//. The exact opposite is true in Donegal dialects where lengthening is the norm in this environment. A different picture emerges when we consider the development of //a// when it precedes preconsonantal //ð/ɣ//.

V __ C	IWM	IR	ICF	IT	IE	DD	TY
Total returns	8	4	5	5	7	6	7
əi (ai)	6	4	2	0	1	0	0
%	**75**	**100**	**40**	**0**	**14**	**0**	**0**
V:	2	0	2	4	5	4	7
%	**25**	**0**	**40**	**80**	**71**	**67**	**100**

Table 3A. 11 /að // > /əi/,/V:/ / V __ C

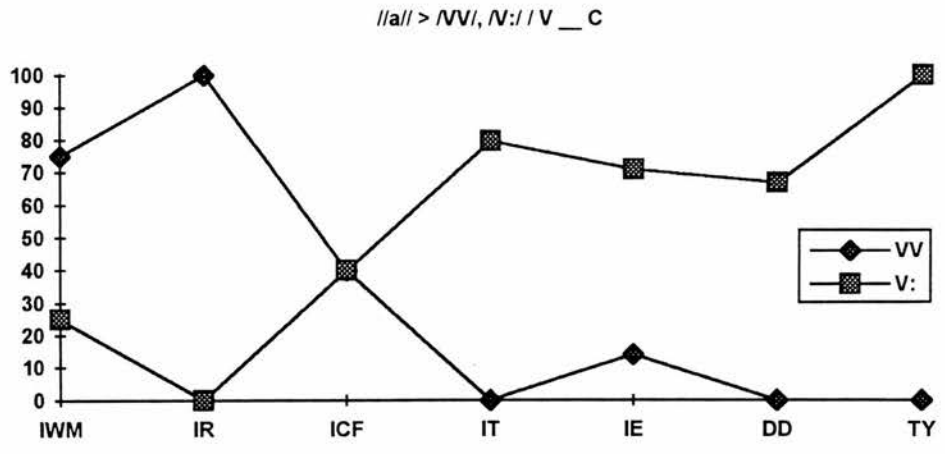

Chart 3A. 3

This chart shows quite clearly that the development of //a// before preconsonantal //ð// differs substantially from that of //a// before intervocalic //ð//. A clear isogloss emerges separating Munster from Connacht and Donegal dialects. Munster dialects prefer diphthongisation, Connacht and Donegal dialects prefer lengthening. This chart illustrates very clearly that southern Connacht (ICF) is a transitional zone where both developments occur more or less equally.

All three graphs considered together show that diphthongisation is the norm for Munster dialects and lengthening is the norm for Donegal dialects. For Connacht dialects, however, where both developments occur, there is a clear difference in development according to phonological environment. Diphthongisation is the norm when //a// precedes prevocalic //ð//, lengthening when //a// precedes preconsonantal //ð//. We cannot be sure that the synchronic situation reflects the original developments of //að/ɣ// because of the possibility that diphthongs may yield long monophthongs and long monophthongs may yield diphthongs. See below for further details.

O'Rahilly (1932: 178-180) provides the fullest discussion of the development of //að/ɣ// to date. He explains the development of /a:/ in Connacht as a straightforward case of vowel lengthening. In Ulster dialects 'stressed *a* ... was first raised in anticipation of the following gutteral, and then lengthened when the *gha* disappeared'. He explains the development of *i*-gliding diphthongs as having first developed in words where //a// preceded prevocalic //ð/ɣ//. Referring to Middle Irish where 'one finds a number of doublets in which palatal and non-palatal *gh* interchange after *a (ai)*, e.g. *adharc : aidherc, aghaidh : aighidh, laghat : laighet*', O'Rahilly states that 'in

such words ... the forms with palatal *gh* gained the day in the spoken language . . . in Munster and Connacht'. Deriving modern *i*-gliding diphthongs from *-aighe-* forms rather than *-agha-*, O'Rahilly claims that 'this diphthongal pronunciation was generalized' and 'in Southern Irish ... was further extended to words containing stressed *agh (adh)* followed by a consonant, e.g. *adhmad*. In explaining the development of *i*-gliding diphthongs for original //að/ɣ// in Irish dialects, McManus (1994: 354) follows O'Rahilly (1932) and quotes examples of //ð ~ ð'// and //ɣ ~ ɣ'// variation from the Early Modern period. Both O'Rahilly and McManus compare the development of final unstressed *-adha* > *-aidhe* > *(a)í* in Modern Irish.[74] If O'Rahilly is correct, this would imply an early isogloss separating southern Irish dialects (Munster and Connacht) from northern Irish dialects (Ulster) and ScG dialects as follows:

southern Irish dialects	**northern Irish dialects & ScG**
aidhearc	*adharc*
aighidh	*aghaidh*
laidhear	*ladhar*

There are, however, a number of problems with O'Rahilly's explanation of the origin of *i*-gliding diphthongs which derive from //að/ɣ//. These are as follows:

(A) It is not clear in all cases what the motivation for the development of by-forms with palatal //ð' ɣ'// may have been and why it appears to only have occurred when

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[74]Both derive the Modern Irish plural allomorph {i:} from the dental stem accusative plural allomorph {*adha*}. See O'Rahilly (1932: 179, n. 1) and McManus (1994: 354). O'Rahilly also points to Munster *ealaí* < *ealadha* which occurs in the phrase *ní healaí dhuit é*. We may add *ealaíon* < *ealadhain*. This implies that final unstressed -/əðə/ or -/əɣə/ yields /i:/. Bergin (1907: 76) implies that originally a diphthong [əi] may have developed in unstressed syllables but later developed or was analysed as a long monophthong /i:/ He compares the development //av// > /əu/ in stressed syllables but //av// > /u:/ in unstressed syllables. Any explanation of the development of //að/ɣ// has to reconcile the two developments //að/ɣ// > /i:/ and /u:/. The surnames *Ó Murchadha, Ó Donnchadha* and some nouns, e.g. *bunadhas* with final unstressed -/əðə/ or -/əɣə/ yield /u:/ not /i:/. Bergin (1907: 76) sees /i:/ as the normal development and explains /u:/ as having developed in words which contained //ð/ɣ// immediately followed by a round vowel /u/ or /o/ in older stages of the language. He cites the examples *bunadhas* < *bunadus* and *Ó Murchadha* < *Muirchatho*. It is uncertain, however, that unstressed rounded vowels existed at the time of the vocalisation of //ð/ɣ//. An alternative explanation would be to derive front /i:/ realisations from an underlying //əðə// and back rounded realisations from an underlying //əɣə// as argued above for stressed syllables. Alternatively, /u:/ realisations may derive from /əvə/ which would provide further evidence for the change //ð// > //v//. Cf. O'Rahilly (1932: 71) who explains the development of *bunús* as follows: *bunadhas* > *bunaghas* > *bunavas* > *bunús*. Similarly he derives *dorú* from *dorava* < *dorgha* (ibid). It is significant that the plural allomorph /u:/ from *-adha-* does not occur in Munster dialects, cf. /i:/ from *-adha-*, GCF: 48 *et passim*.

//ð/ɣ// was preceded by //a//. Following //u// for instance, we can explain the variation between //ɣ// and //ɣ'// in *tughadóir* and *tuigheadóir* as reflecting conservative and progressive dialects respectively where the former reflects forms where palatalisation of the velar fricative did not occur.[75] However, the development of doublets based on alternation between palatal and non-palatal consonants or consonant groups is a complex issue, and one which remains to be investigated fully.

(B) Variant forms //ð/ɣ// ~ //ð'/ɣ'// do not exist for all instances of original //að/ɣ//.

(C) It is not clear why the vocalism of words containing stressed *-adha/-agha-* should have affected words containing stressed preconsonantal *-adh, -agh*. Such syllables are after all phonologicallly quite distinct, unless epenthesis had developed between the fricatives and the following consonantal segment. Moreover, if *i*-gliding diphthongs are to be derived from variant forms containing palatal //ð'/ɣ'//, then we must assume that palatalisation in words where the fricative ocurred preconsonantally only affected the dental/velar fricatives, and not the following consonantal segment. Otherwise we might expect palatal clusters //ð'/ɣ'C'// to have arisen in cases where //ð/ɣ// occurred preconsonantally. However, **aidhmead, *aidhleacadh, *aidhreadh* etc. are not attested. We conclude in the case of //að/ɣC// sequences that variant forms with //að'/ɣ'C// may only have developed if epenthesis had developed between the fricatives and the following consonant, since C'C sequences are generally incompatible in Irish dialects.

Had O'Rahilly wished to explain the spread of //að'/ɣ'// forms from the prevocalic to the preconsonantal environment, he could have pointed to syncopated forms of words of the shape *-adhal, -adhar* which would have introduced the development to words containing preconsonantal *-adh*. This can be illustrated by *ladhar ~ ladhrán*:

ladhar	/Laðər/ > /Laðˈər/, /Laɣˈər/ > /Lair/
ladhrán	/Laðran/ > /Laira:n/ (by analogy with /Lair/)

The questions raised above against O'Rahilly's explanation encourage us to seek an alternative explanation for the development of i-gliding diphthongs from original //að/ɣ// sequences. Before we consider our alternative explanation of the development of *i*-gliding diphthongs, we note here for completeness sake, that the process of back formation should not be discounted in accounting for some at least of our examples.

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[75]See McManus (1994: 355).

For instance the form *aighidh* could be explained as a back formation based on inflected forms such as *aighthe*, *aighthibh* etc. See DIL s.v. *agad*. It is interesting to note that *aghaidh* is realised exceptionally as /əi/ in DD which might argue for *aighidh* being a back formation rather than representing the regular development of prevocalic //að/ɣ//.[76] Similary the existence of palatalised syncopated forms such as diminutives like **aidhrcín (< adharc), *laidhrín (< ladhar)* could conceivably have given rise to the back formations *aidhearc, laidhear*. Back formation cannot, however, be advanced to explain many of the instances of preconsonantal //aðC//, e.g. *adhmad, adhradh, adhlacadh* etc.

More importantly, however, as we shall discuss shortly, the distinction between prevocalic and preconsonantal //ð/ɣ// may in some cases be superfluous. It is conceivable, indeed certain in some cases, that epenthesis developed in syllables of the shape //að/ɣC// where C is not a homorganic consonant. For further discussion see below. Greene (1952: 213) suggests that epenthesis must have developed in some at least of these words.[77] He notes that 'the diphthong which appears in, for example, *Tadhg* in the modern dialects is really a special case of svarabhakti: [aðə] arising from the epenthetic vowel is treated in exactly the same way as [aðə] in *adharc*'. The development of epenthesis by the end of the 13th century in the name *Tadhg* appears to be supported by the spellings *Tatheg* (1280, 1283), *Tadheg* (1295), *Tadhog* (1306) but cf. *Tathg* (1299) quoted in O'Rahilly (1930: 171). If we may rely on the form *Tayg* (1295) (O'Rahilly 1930: 172), then the development of an *i*-gliding diphthong in the name *Tadhg* may be as old as the end of the thirteenth century. It is worth pointing out that an epenthetic vowel must have developed in the name *Tadhg* before the dental fricative //ð// merged with //ɣ//. Otherwise *Tadhg* would have become **Taghg* [taɣg], containing a homorganic cluster [ɣg], which would presumably have yielded */ta:g/. The development of epenthesis in *Tadhg* would certainly explain the parallel development of //a// before prevocalic //ð/ɣ// and //að// in *Tadhg* in Connacht dialects.

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[76]See, however, below for an alternative explanation of the development of the vocalism in this case.
[77]It is conceivable that epenthetic vowels may not have developed before homorganic clusters, e.g. //ðl//, //ðr//, //ɣg//.

Alternative explanation of the development of //að/ɣ//

//að/ɣ// / __ ə

We claim that it is unnecessary to posit alternative forms with underlying palatal //ð'/ɣ'// in order to explain the development of *i*-gliding diphthongs from original //að/ɣ// sequences. We prefer to derive *i*-gliding diphthongs from disyllabic sequences [ajə], [əjə] where [j] is a glide which developed from /ɣ/ via the velar approximant [ɯ], following //a//. Furthermore, we claim that *i*-gliding diphthongs which in turn derive from disyllabic [ajə], [əjə] sequences can only have developed when //a// preceded prevocalic //ð/ɣ// in Munster and Connacht. Before we consider in detail the development of //a// before preconsonantal //ð/ɣ//, we shall first consider the development of //a// before prevocalic //ð/ɣ//. We agree with O'Rahilly that *i*-gliding diphthongs must have originated in syllables containing //a// followed by prevocalic //ð/ɣ//. This seems to be supported by the the fact that *i*-gliding diphthongs are the norm in such cases throughout Munster and Connacht dialects in this environment.[78]

A consideration of the realisation of the lexeme *adharc* in Irish dialects, based on LASID I: 13 is instructive, see map 6. Realisations may be classified into three basic types:

A monophthongal monosyllables: /e:/, /ʏ:/
B trimoraic sequences:[79] [aiə], [əiə], [ajə], [əjə]
C diphthongal monosyllables: /ai/, /əi/

This map shows clearly that monophthongs (Type A) occur without exception in Ulster and that diphthongs (Types B and C) occur without exception in Connacht and Munster dialects. Trimoraic sequences, in some cases analysable as disyllabic sequences, survive in both Connacht and Munster dialects, particularly in the northern parts of both dialect areas, with monophthongs having made inroads into the southern parts of each. In reflexes of //að/ɣ// sequences, the correlation between monophthongisation and monosyllabic forms in Ulster, and between diphthongisation and disyllabic (and monosyllabic) forms in other varieties of Irish has not hitherto been noted. The diphthongs which occur in monosyllables are clearly a development of disyllabic [əjə] or [əiə] sequences. It is not clear, however, what preceded the monophthongs /e:/, /ʏ:/ in Ulster dialects. Whatever the answer is to that question, it is clear that the reduction to monosyllables of disyllabic sequences in words of the

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[78]We will deal with the exceptions *adhbhar, Sadhbh, Tadhg, laghach* below. It is argued below that Ulster may have developed differently to Munster and Connacht in this respect.
[79]Which may or may not represent phonological disyllables.

shape //að/ɣə// has resulted in long monophthong vowels in Ulster. Leaving aside the Ulster reflexes which may represent a development quite different to that which occurred in Connacht and Munster and more akin to the development in ScG, we proceed to discuss types (B) and (C). There can be no doubt that type (C) has developed from type (B) with the reduction of disyllables to monosyllables. We therefore concentrate on the origin of type (B).

Clearly Type (B) sequences: [aiə], [əiə] derive from [ajə], [əjə] sequences. We have seen that O'Rahilly and McManus would both derive [j] in such instances from a consonantal //ð'/ɣ'//. It is our contention, however, that [j] is in origin a glide rather than a reflex of an original palatal consonantal segment. The vocalisation of /ɣ/ < //ð/ɣ// in //að/ɣə// sequences would have resulted in the disyllabic sequence /Aɯə/, where [A] represents the reflex of original //a// in this position, and /ɯ/ a velar approximant. We claim that the subsequent development of this velar approximant depended on the nature of the preceding vowel. Its development may be seen as one of assimilation to the preceding vowel, which may be expressed as follows:

/ɯ/	→	/w/	/ V[+back][+round] __	Rule 3A
	→	/j/	/ V[–back] __	

This rule accounts for the following developments, which are discussed in subsequent chapters:

//uð/ɣ//	→	/u:/
//oð/ɣ//	→	/əu/ (> /o:/)
//ið/ɣ//	→	/i:/
//eð/ɣ//	→	/əi/
//að/ɣ//	→	/əi/

Our hypothesis for the development of //að/ɣə// sequences in Munster and Connacht dialects may be summarised as follows:

//að/ɣ/ə// > [Aɣə] > [Aɯə] > [Ajə] > /əi/[80]

[80]It is possible that the development of *i*-gliding diphthongs may have been reinforced by inflected forms of words of the shape //að/ɣəC// where oblique forms of the shape //að/ɣiC'// could have yielded [A-i] following the vocalisation of /ɣ/, subsequently being reduced to give [əi]. It is conceivable that the vocalism of oblique forms may have affected nominative forms by a process of back formation. The development of //aðəC'// followed by a palatalised consonant may ostensively explain the development of *aghaidh* (< *adhaigh*) > /əi/ in the majority of Irish dialects, including some Donegal dialects where /əi/ also unexpectedly occurs, i.e. //aðəɣ'// = [aðiɣ'] > [A-iɣ'] > /əi/.

Our explanation has the advantage of explaining why //Vð/ɣə// should have developed via a [Vjə] stage in Munster and Connacht dialects.[81]

As we have noted, it is not entirely clear how Donegal /ɤ:/ and /e:/ reflexes of //að/ɣ// are to be explained. In particular it is not certain if the development involved an intermediate stage involving /j/ for /ɣ/ via /ɯ/. The reflexes in DD and TY of //að/ɣ// sequences are /ɤ:/ and /e:/ as we have seen in section A. Quiggin notes, however, that younger speakers had [ei], [eə], which we analyse here as /e:/, see chapter 2. Ó Baoill (1996a: 8) states that some Donegal dialects have *i*-gliding diphthongs, here denoted as /əi/, as reflexes of //að/ɣ// 'mar atá san fhocal Béarla *height*'. However, it is not clear what the phonemic status of these diphthongs is, or indeed how they have developed. The three main reflexes of //að/ɣ// in Donegal, namely /ɤ:/, /e:/, [əi], can be derived in the following ways:

A //að/ɣ//	**>**	**[Aɯ]**	**>**	**[ɤ:]**				
B //að/ɣ//	**>**	**[Aɯ]**	**>**	**[ɤ:]**	**>**	**[e:]**		
C //að/ɣ//	>	[Aɯ]	>	[ɤ:]	>	[e:]	>	[əi]
D //að/ɣ//	>	[Aɯ]	>	[e:]				
E //að/ɣ//	>	[Aɯ]	>	[Aj]	>	[əi]		
F //að/ɣ//	**>**	**[Aɯ]**	**>**	**[Aj]**	**(>**	**[əi])**	**>**	**[e:]**
G //að/ɣ//	>	[Aɯ]	>	[Aj]	>	[ɤ:]		

It is possible that [j] glides may have developed in Donegal dialects as in Munster and Connacht. The reduction of disyllabic [Ajə] to a monosyllable may have resulted in either of the mid vowels [ɤ:] or [e:], or the *i*-gliding diphthongs reported by Ó Baoill. However, there is evidence to suggest that /e:/ has developed recently from an original /ɤ:/ in some dialects, thus arguing for derivations A and B. Quiggin notes that the younger generation substitute /e:/ for the older generation's /ɤ:/ (DD: 29). Moreover, the development of //að'/ɣ'// discussed below shows that /əi/, not /e:/ appears to be the regular reflex of [Aj] < //að'ɣ'// in Donegal.[82] If /ɤ:/ is indeed the original development in Ulster, then we must conclude that the development of //að/ɣ// has been different in Donegal dialects from other Irish dialects. Indeed /ɤ:/ closely parallels the ScG development as we shall see. Alternatively, *i*-gliding

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Note, however, that Bergin (1907: 77) argues that *aiged,* with palatal //ɣ'//, may have been the original form.

[81]However, it should be noted that a similar development has been noted in some Donegal dialects, e.g. */əi/ saghart (< sagart), agham (< agam), agad (< agad)* (Ó Baoill 1996a: 8). I have noted disyllabic /ojə/ in *saghart, agham, aghad* forms in south west Donegal dialects, e.g. in Telionn and Gleann Cholm Cille.

[82]Note, however, /e:/ *claidheamh*.

diphthongs, may have been monophthongised to [e:] (or [ɤ:]?), as suggested in derivation F. It is possible that there may have been more than one development in Donegal. It is conceivable, for instance, that both developments A and F may have occurred in different dialects, in which case A parallels the development in Scotland, and F reflects the normal Irish development. This would suggest that Donegal is a mixed dialect, showing evidence of both Scottish and southern Irish developments. The change implied in derivation B (i.e. /ɤ:/ > /e:/), may be explained as a straightforward case of phonetic fronting. However, the possibility of a socially conditioned change whereby /e:/ has been introduced or borrowed from dialects in which F may have been the normal development, cannot be ruled out.

That the development of //að/ɣ// involved the intermediate stage [Auɥ] seems almost certain. Quiggin transcribes the stressed syllable of *adhraim* (vb) as /əɯ/ (DD: 63). He notes that 'there is always a suspicion of a ɣ glide at the finish' of this diphthong (DD: 63). It is significant that /əɯ/ 'is confined to the oldest people' and that the diphthong /əɯ/ is frequently retained in absolute word final position e.g. *sleagh, feadh, is eadh* (DD: ibid). In favour of A being the original development in DD at least, we may note that /e:/ was a recent development of /ɤ:/ among the younger generations of the early twentieth century.[83]

//a// / __ ð/ɣC

We must now consider the development of //a// before preconsonantal //ð/ɣ//. We have already noted that in some cases the distinction between prevocalic and preconsonantal //ð/ɣ// may be superfluous when we consider that epenthesis is likely to have developed in some //ð/ɣC// clusters. In particular, we noted that //a// in the lexeme *Tadhg* which almost certainly developed an epenthetic vowel has developed in the same fashion as //a// before prevocalic //ð/ɣ//. Compare:

	IWM	IR	ICF	IT	IE	DD	TY
adhV	əi	əi	ai	əi	əi	ɤ:	e:
Tadhg	əi	əi	ai	--	əi	ɤ:	e:

Table 3A.12

O'Rahilly (1932: 201-2) concludes that 'the beginnings of the epenthetic vowel in Irish hardly go back beyond the thirteenth century' and further that 'the epenthetic vowel must have arisen not later than the thirteenth century, before *th* had ceased to be a

[83]A parallel development is to be seen in the fronting of /ɯ:/ to /i:/ in DD: 26-7 and in other Donegal dialects.

dental spirant and acquired the value of *h*'. This latter conclusion is based on the evidence of the lexeme /koləpə/ < *colbtha* where O'Rahilly claims epenthesis had developed between *l* and *b* before the reduction of //θ// to /h/. The synchronic realisations of *Tadhg,* which as we have argued, derive intermediately from **Tadhag* suggests that epenthesis had developed in Irish (in this lexeme at least) before the change //ð// > /ɣ/ for if it had not then we might expect *Tadhg* to have yielded *Taghg* */ta:g/, the development of epenthesis not being possible in the homorganic cluster /ɣg/.

We have already noted that //a// before preconsonantal //ð/ɣ// has yielded *i*-gliding diphthongs in almost all cases in Munster dialects, e.g. /əi/ *badhbh, fadhb(h), adhmad, adhlacadh, adhradh, Tadhg*. The parallel development of //a// in these words and of //a// before prevocalic //ð/ɣ// would seem to imply that epenthesis had developed in the //ðC// clusters in these words. In the case of *adhlacadh* (and possibly also *adhradh*) epenthesis presumably developed only when the dental //ð// became the gutteral /ɣ/ for we would not expect epenthesis in the homorganic cluster //ðl// (or perhaps in //aðr//). The development of //að/ɣ// sequences in Munster dialects may be summarised as follows:

	//að/ɣ//	→	//að/ɣə// / __ C	C = /g b v m l r/
1	//að/ɣ//	→	/əi/ / __ ə	
		Rule 3A.1		

This accounts for the Munster forms:

1	/əi/	*Tadhg, fadhb, badhbh, adhmad, adhlacadh, adhradh*

The development of /a:/ in Munster *adhbhar* may be explained in two ways: (1) it may represent a borrowing from Connacht dialects; (2) it may imply the existence of a sub-rule 3A.1a which lengthens /a/ before //ð/ɣC// sequences where epenthesis did not develop.

//að/ɣ//	→	/a:/ / __ C	Rule 3A.1a

This would suggest a difference in development of epenthesis in //að/ɣ// before //v// word internally and word finally:

//að/ɣv// → //að/ɣəv// > /əi/ / __ # (e.g. *badhbh*)
//að/ɣv// → //að/ɣv// > /a:/ otherwise (e.g. *adhbhar*)

The development of /a:/ rather than /əi/ in Connacht and Donegal dialects in a similar word class including *adhbhar*, *badhbh, adhmad,* etc. would seem to suggest that epenthesis did not develop in certain //ð/ɣC// clusters so readily in Connacht and Donegal as it did in Munster. If epenthesis had developed in Connacht and Donegal dialects, then we might well expect //a// before preconsonantal //ð/ɣ// to have developed as //a// before prevocalic //ð/ɣ// and to have yielded /əi/ in Connacht and /ɤ:/, /e:/ in Donegal. This occurs significantly in *Tadhg* where the development parallels that of prevocalic //að/ɣ// sequences. From this it may be implied that epenthesis occurred in //ðg// sequences in Connacht and perhaps also in Donegal. The development of //að/ɣ// sequences in Connacht dialects may be described as follows:

	//að/ɣ//	→	//að/ɣə// / __ C	C = /g b?/[84]
1	//að/ɣ//	→	/əi/ / __ ə	
2	//að/ɣ//	→	/a:/ / __ C	C ≠ /g b/[85]

Rule 3A.2

This accounts for the Connacht forms:

1	/əi/	*adharc, gaghar, Tadhg*
2	/a:/	*badhbh, adhmad, adhlacadh, adhradh, Maghnas, Raghnall*

The development of //að/ɣ// sequences in Donegal may be described as follows:

	//að/ɣ//	→	//að/ɣə// / __ C	C = /g b?/[86]
1	//að/ɣ//	→	/ɤ:/, /e:/ / __ ə	
2	//að/ɣ//	→	/a:/ / __ C	C ≠ /g b/[87]

Rule 3A.3

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[84]The question mark following /b/ indicates that there are no examples of the sequences //að/ɣb// attested in the Connacht monographs. The development of epenthesis in the cluster //ð/ɣb// is implied by the develoment of *leadhb* in Connacht dialects, see chapter 4.
[85]Only verified for C = /v m l r n/.
[86]The question mark following /b/ indicates that there are no examples of the sequences //að/ɣb// attested in the Donegal monographs. The development of epenthesis in the cluster //ð/ɣb// is implied by the develoment of *leadhb* in Donegal dialects, see chapter 4.

This accounts for the Donegal forms:

1	/əi/	*adharc, ladhar, gaghar, Tadhg*
2	/a:/	*badhbh, Sadhbh, adhmad, cadhnóg*[88]

I have not noted any instances of bimorphemic sequences in which //að/ɣ// occurs at the juncture. Based on conclusions reached in chapter 4 (section C), we might expect, such instances to yield /a:/. One possible instance of this may be Connacht *faghaim* etc. (vb) /a:/.

The rules set out above for the development of //að/ɣ// sequences show that the differences between Munster and Connacht (and to a certain extent Donegal) dialects are due to differing domains for the development of epenthesis. The synchronic reflexes of //að/ɣ// sequences provide us with a further insight into the development of epenthesis in earlier stages of Irish dialects. In particular it allows us to further refine the environments in which epenthesis developed and moreover the areas in which it occurred:

//að/ɣ// → //að/ɣə// / __ C, C = /g b v m l r n?/ Munster
Rule 3A.4

//að/ɣ// →//að/ɣə// / __ C, C = /g b/ Connacht, Donegal
Rule 3A.5

There is evidence for the development of epenthesis in the groups //ɣr//, //ɣl// in some Donegal dialects, e.g. *adhraim* [iɣəri:m], *teaghlach* [t'iɣəlax] DD: 42.[89] It is not certain, however, if the epenthesis in such instances reflects a later development of epenthesis, or reflects the situation in earlier stages of the language. It is possible that /ɤ:/, /e:/ reflexes of //að/ɣC// in Donegal dialects reflect forms where epenthesis developed and /a:/ reflects forms where epenthesis did not develop.

Rules 3A.4-5 imply that the domain for the development of epenthesis has been greater in Munster dialects. In particular, it implies that epenthesis developed in CC clusters where the final C = one of the sonorants /l n r/ or /v/. This class may be classified by the feature [+continuous] [+voice]. This difference of domain is supported

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[87]Only verified for C = /v m n/.
[88]I take *traghnach* /e:/ to be based on the nominative *traghan*.
[89]Epenthesis is not attested in LASID IV, Q. 1009 returns for *teaghlach* in the group /ɣl/.

by the synchronic evidence for the development of epenthesis in Irish dialects, see especially (C) below.

Epenthesis in Irish

The development of epenthesis in Gaelic dialects occurs in the following clusters:

(A)

l n r	+	C	C = / b g v m x n (ɣ)/[90]

Examples: *dearg, dealg, borb, dorcha, marbh, ainm, banbh, Alba, tilg, arbhar, Donnchadh, suirghe, dorn.*

Epenthesis in these groups is common in all Gaelic dialects although it is somewhat restricted in Manx, apparently not occurring in the groups /lg rb rg/.

(B1) Irish

		l
m	+	n
		r

Examples: Irish: *imleacán, simné, seamróg, iomramh*

(B2) ScG

		l
m	+	n
		r
		s
		ch

Examples: ScG: *imlich, tiomna(dh), iomradh, aimsir, iom(a)sgaoil(?), timcheall, iomchar*

Epenthesis in (B) groups occurs to varying degrees only in Munster and ScG dialects.

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[90]Where C is not homorganic to *l, n, r.*

(C)

C	+	l n r	C = /b d g p t k/, /v f x s h (< //θ//)/

Examples: Manx: *foclan, docrach, oibreach(adh)*
Munster: *eagla, acra, aigne, saibhreas, aifreann, gasra, seisreach, tosnú, cothrom, iothla, aithne, seachrán, cábla, stábla, cúpla, ampla*

Epenthesis occurs in (C) groups only in Munster dialects and to a certain extent also in Manx. For our purposes it is interesting to note that short vowels are lengthened before the groups //b d g// + //l r// in southern Connacht dialects, e.g. /a:gLə/ *eagla*, /f'r'a:grə/ *freagra*, /ma:drə/ *madra*, /aib'r'ə/ *oibre*.

Rule 3A.4 which states that epenthesis develops in //ð/ɣC// groups where C = /v m l r n?/ in Munster dialects only is clearly a subtype of both types (B1) and (C). Indeed given the development of epenthesis in the groups //v f x θ (> h)// + //l n r// where the first consonant is a fricative, we might expect the rule to include the groups //ð/ɣ// + //l n r//. The fact that type (C) occurs only in Munster dialects supports the conclusion reached above that epenthesis developed only in Munster dialects in the groups //ð/ɣ// + //v m l r//. This supports the conclusion reached above that the differences of development of //að/ɣ// sequences in Munster and Connacht dialects particularly, is due to differences in the development of epenthesis in both areas.

This leaves us to consider the apparent irregular developments witnessed in *adhbhar* /a:/, /au/ IWM, *traghnach* /ai/ ICF and *laghach* /a:/ in all Munster and Connacht dialects. *Adhbhar* /a:/, /au/ in IWM is an example of what may be referred to as homophonic semantic split. The etymon *adhbhar* (IẆM) has split both phonologically and semantically: /aur/ means 'cause', /a:vər/ means 'amount'. We have seen that the development of epenthesis in *adhbhar* in Munster dialects would regularly have yielded */əivər/ which does not occur, cf. /əi/ *badhbh*. The possible development of /a:/ in Munster *adhbhar* is discussed above. The /au/ reflex can be explained as deriving from **abhar* where the cluster //ðv// has been simplified without compensatory lengthening of //a//. This also occurred in the lexeme *Sadhbh* /au/ in Connacht dialects. Alternatively, /au/ may represent a reduction of the sequence /a:v/.

Connacht *traghnach* 'corncrake' where we might regularly expect /a:/ rather than /ai/ has no doubt been modelled on *traghan* where /ai/ is the expected development. Compare /əi/ *traghan* IE.

Laghach

Laghach is realised with /a:/ in Munster and Connacht dialects, with the meanings 'generous' (IWM) and 'benevolent' (IT). In Donegal it is realised with /ɤ:/ (DD) and /e:/ (TY) with the meanings 'handsome' (DD) and 'decent' (TY). The development of /a:/ in *laghach* in Munster and Connacht dialects is irregular as we would expect /əi/ here. This suggests that *laghach* may not be the original form in these dialects, or alternatively, that its development has been affected or contaminated by another word.[91] On the other hand, the Ulster and ScG forms /e:/, /ɤ:/ clearly derive regularly from *laghach*. What is to be made of the Connacht and Munster forms?

Breatnach (1962: 22) suggests two possible derivations for *laghach*: (a) from *lagh* 'renown'; (b) from *lagh* 'reward', a variant of *logh* according to McKenna and Mac Airt (see Breatnach ibid). *Logh* is attested in the *Irish Grammatical Tracts* II, Declension, §95, p. 128. Its variant form *lagh*, according to McKenna and Mac Airt, is also attested in classical verse, see Breatnach (1962: 22). The editors of DIL gloss *lag* DIL s.v. as 'fame, renown' but do not mention the possibility of some instances meaning 'reward' as suggested by McKenna and Mac Airt. A more preferable derivation would be to derive *laghach* from *lagh/logh* meaning 'reward'. The semantic development 'reward' > 'worth', 'kind', 'pleasant' would be natural. To these possibilities, we add three more:

(1) The Munster and Connacht forms could derive from **laghdhach* < *laghadh* (a variant of *loghadh*, itself perhaps derived from *logh/lagh 'reward'*, see DIL s.v. *logad*). The development of //a// > /a:/ before the group //ɣð// in these dialects would be regular. Compare *breaghdha* /a:/. With a form **laghdhach*, we may compare the adjectival formation *laightheach~loightheach*, DIL s.v. *laigthech*.

(2) /a:/ in *laghach* may derive by back formation from *laghchán* (< *laghach* + *án*) where the development //a// > /a:/ would be regular in Munster and Connacht, see FGB s.v. *láchán*, and also Dwelly s.v. *laochan* (which to judge by the synchronic

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[91]Cf. Ó Murchú (EPG: s.v. *laghach*) who notes that the alternative form /Lo:x/ may derive from *lóch* 'bright'. For an alternative derivation, see below.

forms, usually /ɤ:/, clearly derives from *laghchan*, not *laoch* as suggested by the modern orthographical form, which would yield /ɯ:/ in most ScG dialects).

(3) The most likely explanation of /a:/ *laghach* in Munster and Connacht dialects is that the form has been influenced by a semantically close word. I suggest that this word may have been *lógh* 'value, worth; reward', DIL s.v. *lóg*. Breatnach (1962: 22) suggests that '*lóg(h), lúach* 'price, reward', an old n. s-stem . . . has long since taken the place of obsolete *logh*. The existence of the variant forms *logh~lagh* and perhaps *logh~lógh* would naturally have given rise to variation between *lagh~lágh* by analogy. Based on this evidence, I would derive Munster and Connacht /a:/ from *lághach* rather than *laghach*. Cf. Ó Cuív (IWM: 146) and de Búrca (IT: 157) who spell this word as *lághach*. Breatnach's (1962: 19) earliest manuscript attestation with a long *á* is from the seventeenth century. However, *ládhaig* occurs rhyming with *chomhrámhaigh* in the late fifteenth century *Book of Lismore*, see O'Grady (1892: 344), DIL s.v. *lagach*.[92] We may note here that the variation between /Lɘɘx/ and /Lo:x/ reported by Ó Murchú for *laghach* in EPG s.v.. Ó Murchú suggests deriving /Lo:x/ from 'a different etymon historically' and puts forward *lóch* 'bright' (DIL s.v.). I would suggest that EPG /Lo:x/ is more plausibly derived from *lóghach*, deriving from *lógh* + *ach*. This derivation supports the hypothesis that V and V: reflexes of this word exist in Gaelic.

Conclusion

The alternative explanations of the modern reflexes of //að/ɣ// offered here questions the received interpretation and moreover offer a more satisfactory solution to a number of difficulties posed by O'Rahilly's hypothesis. We prefer to explain the development of //a// before the fricatives //ð ɣ// in purely vocalic terms without recourse to variation in original consonant quality.

NOTE:

There is some slight evidence to suggest that the development of //a// before //ɣ// and //ð// may have been different in some Munster dialects. If the vocalism of IWM *laghach* /La:x/ is not to be explained as outlined above, the development of a long monophthong /a:/ in this word might imply that lengthening rather than

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[92]I have been unable to check O'Grady's text against the original manuscript. It should be noted that *comhrámhaigh* would appear to represent *comhramhach* with short *a*, see DIL, s.v. *comram(ach)* 'contest' etc. which raises a question about the form *ládaig*.

diphthongisation was common before the velar fricative //ɣ// in Munster dialects. We may compare the development of /e:/ in IWM *Maghnas*. This might suggest that the vocalisation of //ɣ//, which resulted in the development of a long monophthong, may have occurred before the vocalisation of original //ð// which resulted in the diphthongisation rather than the lengthening of //a//. In particular the evidence of IWM *laghach, Maghnas* might suggest that the vocalisation of //ɣ// may have occurred before the development //ð// > //ɣ//, in Munster dialects at least, and furthermore that the vocalisation of //ɣ// may in fact have led to the development //ð// > /ɣ/ by chain effect. However, the evidence available at present is not sufficient to prove this. Moreover, it does not appear to be supported by the development of //e// before //ð//, //ɣ//, see chapter 4.

The possibility that //ɣ// may have been vocalised word internally before the general development //ð// > //ɣ// leaves open the possibility that //ð// may, word internally, have itself been vocalised, but with different results in particular instances. In particular, it is possible that the vocalisation of //ð// may have resulted in a front semi-vowel [j], thus retaining the front articulation of the dental fricative //ð//. This would provide an alternative explanation for the development //að// > /əi/ in Munster and Connacht dialects. We shall see in chapter 4 that *i*-diphthongs have also developed from //eð// in Munster and Connacht dialects which could be taken as evidence for the development //ð// > /j/ following //e//. Similarly the development //iðC// > /i:C/, e.g. *iodhbairt* may also be taken as evidence for the development //ð// > /j/. Clearly then, front vowels or front gliding diphthongs have developed from original //Vð//, only when V = //i e a//, never when V = the round vowels //o u//. This would seem to imply a different treatment of original //ð// according to the prevocalic environment. The vocalisation of //ð// following non-round vowels (in intervocalic position) may have led to the development of a front approximant [j]. On the other hand the vocalisation of //ð// following round vowels seems to have resulted in lengthening to /o:/ or *u*-gliding diphthongs. The development outlined here cannot be proven as the correct one since, as we pointed out above, there is insufficient evidence to illustrate the development of //aɣ// syllables. That *raghad* 'I will go' is realised as an *i*-gliding diphthong would seem to imply that //að// and //aɣ// developed along similar lines in Munster. However, the *i*-gliding diphthong [əi] may have developed originally in the third singular or base form *raghaidh* along the lines argued above for *aghaidh* and spread to forms with non-palatal final, e.g. *raghad*, in which case the evidence for the parallel development of //að// and //aɣ// is rendered questionable. Note that in verse *ragh-* may assonate with /e:/, which may in turn imply an /e:/ realisation for *ragh-*.

See *raeghach* for *raghadh* in Ó Donnchadha (1994: 17). Bergin (1907: 76-7) derives *i*-gliding diphthongs from /aɣ/ and compares the development in 'West Germanic *dag* > O. Eng. *dæg* > Mid. Eng. *dai, day*'.

Consequences of the vocalisation of //ð/ɣ// in //að/ɣ// sequences

We claim that the development of //að/ɣ// sequences in Gaelic is related to the general development of CG *ao* //əː//. Table 3A.13 illustrates the reflexes of both word classes in Irish dialects:

	Munster	Connacht	Donegal (A)	Donegal (B)
//əː//	eː	iː	iː	ɯː
//að/ɣV//	əi	əi	eː	ɤː
//að/ɣC//	əi	aː	eː, aː	ɤː, aː

Table 3A.13

Table 3A.13 shows that reflexes of both word classes are on the whole differentiated in all Irish dialects. It is generally accepted that CG *ao* was realised as a long mid vowel, which we may denote with the symbol //əː//,[93] which contrasted with CG //eː// and //oː//. If correct, this implies that Munster dialects have retained the original height of the vowel whereas Connacht and Donegal dialects have raised it to the high position. O'Rahilly (IDPP: 32 *et passim*) derives Donegal Irish *ao* /ɯː/ from /ɤː/ although he offers no explanation for the raising. He also derives Irish *ao* /iː/ from /eː/ by a similar raising although he adds that the development > /iː/ 'was probably, in part at least, due to the influence of *aoi* (pronounced Iː) in inflected forms' (IDPP: 33). In what follows, we describe the possible motivating factors for the raising of reflexes of *ao* in northern Irish dialects. See maps 8a and 8b for reflexes of *ao* //əː// in the word *caol*, and reflexes of //aðC// in the word *adhradh*.

Donegal /iː/ reflexes of CG *ao* are likely to represent a secondary development of an original /ɯː/ sound.[94] If the Donegal reflexes of //əː// i.e. /iː/, /ɯː/ derive from /ɯː/, then it is reasonable to assume that //əː// was realised as a back, presumably unrounded vowel in Donegal dialects. This would mean that CG //əː// would have been realised as an [ɤː]-like vowel, similar to the older reflex of //að/ɣ// in Donegal. The reduction of [əɯə] to [ɤː] could potentially have led to a merger between both word classes {//əː//} and {//að/ɣə//} in Donegal dialects. We claim that CG //əː// was

[93]See Shaw (1968/69), Ó Murchú (1989a).

[94]We deduce this from Quiggin's statement that the younger speakers substitute /iː/ for /ɯː/ of the older generation, see DD: 26.

raised so as to avoid merger with the the word class {//að/ɣə//}. The development of //əː// and //að/ɣ// sequences provides us with a possible instance of a chain shift in Irish.[95] That both word classes were in danger of clashing, not just in Donegal dialects, but in Munster dialects also, is suggested by the following:

IWM

{//əː//} ↔ {//að/ɣ//}	//əː// → /əi/	*maothán, saoráideach, slaodán, etc.*[96]
↓ ↓	//aɣ// → /eː/	*Maghnas*[97]
/eː/ /əi/		

DD

{//əː//} ↔ {//að/ɣ//}	//əː// → /ɤː/	*caora, craor, claon*[98]
↓ ↓	//að// → /ɯː/	*adhaltranas, Adhomhnán*[99]
/ɯː/ /ɤː/		

Given the contrast between the word classes {//əː//} and {//að/ɣ//} in Munster and the evidence just presented for the related development of each, it is tempting to suggest that *i*-gliding diphthongs as reflexes of //að/ɣ// in Munster dialects may have developed as a means to avoid merger with {//əː//}, cf. *Maghnas* /eː/. In particular, this suggests that the development of palatal glides [j] for original //ð/ɣ// may have been a peculiar Munster development to solve a peculiarly Munster problem. The development of [j] glides and the subsequent development of *i*-gliding diphthongs may in other words have originated in Munster and spread northwards to Connacht, without ever necessarily penetrating Ulster. This may support the suggestion that *i*-diphthongs have spread into Connacht from Munster dialects. Similarly, the raising of //əː// in Donegal appears to have originated naturally in Donegal as a solution to a Donegal problem. The raising of //əː// and the development of *i*-gliding diphthongs (as reflexes of //að/ɣV// sequences) in Connacht do not appear to be structurally related, or at least cannot be explained in structural terms within the phonological system of Connacht. In other words, the reflexes of both word classes {//əː//} and {//að/ɣ//} in Connacht represent fudges or mixed dialect forms from Donegal and Munster

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[95]The correlation between the raising of reflexes of *ao* and the vocalisation is also stated by Shaw (1968/69: 154).

[96]IWM: 98. All containing original *ao* although synchronically pretonic. Rather than representing mergers with reflexes of //að/ɣ//, i.e. /eː/ > /əi/, these diphthongal realisations may reflect the original pre-CG dipthongal value of *ao*.

[97]IWM: 110.

[98]DD: 31.

[99]DD: 29.

respectively. This adds scientific weight and expression to O'Rahilly's statement about Connacht dialects:

> The Irish of Connacht showed no power of expansion, and lacked the energy of the two other dialects [i.e. Munster and Ulster] . . . . It was apparently waiting passively to be overrun by one or other of its rivals, or to be partitioned between them. (IDPP: 264)

The front realisation of //ə:// in Munster dialects and the back realisation found in Ulster and Scotland may provide us with evidence for an early isogloss which separated southern Ireland from northern Ireland and Scotland. It may imply that /ə:/ was realised as a front vowel in the former and as a back vowel in the latter. These variants we may symbolise as [E:] and [Λ:] respectively. It is tempting to interpret both realisations as two different results of the merger of the Old Irish diphthongs *ae* and *oe*, with southern Irish dialects merging as *ae* which ultimately resulted in [E:], and other Gaelic dialects merging as *oe* which resulted in [Λ:].

Our explanations of the development of //a// before prevocalic //ð/ɣ// in Irish dialects may be summarised as follows:

//að/ɣ/ə// > [Aɣə] > [Aɯə] = [Ajə] > /əi/ Munster, Connacht dialects

//að/ɣ/ə// > [Aɣə] > [Aɯə] > ([ʏ:ə] >) [ʏ:] Ulster dialects

Development before //ð'/ɣ'//

There are relatively few lexemes attested in the monographs which illustrate the development of //að'/ɣ'//. The examples which I have noted are presented in the following table:

	IWM	IR	ICF	IT	IE	DD	TY
__ ð'/ɣ'V							
draighean	--	--	**ai**	--	--	iə (sic)	--
Laighin	--	--	--	--	--	**əi**[100]	--
saighead	--	--	--	--	--	**ɤ:**	**e:**
claidheamh	i:	**ai**	av'	av'	âv'	**ẽ:**[101]	**e:**v'
__ ð'/ɣ'C'							
draighneán	--	--	--	--	--	--	i:
aighneas	**əi**	--	--	--	--	--	--
maighdean	**əi**	**əi**	--	**əi**	**əi**	**əi**	**əi**
braighdean-	**əi**	**əi**	--	--	--	--	--
faidhb(e)	**əi**	--	**ai**	--	--	--	--
saighdiúir	--	--	--	**əi**[102]	--	**əi**	**əi**
saighneán	--	--	--	--	--	**əi**	--[103]

Table 3A.14

Since the development of *claidheamh* and to a certain extent *draighean* (in DD at least) has been irregular, the only evidence which we have for the development of //að'/ɣ'// prevocalically is *Laighin* and *saighead* which are attested in DD, TY. The Donegal forms suggest that diphthongisation may have been the original development (see *Laighin*) but that such diphthongs may have been monophthongised to /ɤ:/ or /e:/ when disyllables were reduced to monosyllables (e.g. *saighead*). However, the small number of examples means that this is extremely tentative.

We are in a better position to comment on the development of //að'/ɣ'// preconsonantally. The main development appears to have been the development of *i*-gliding diphthongs, although lengthening to /e:/ is also attested in Donegal (e.g. *saighneáil* TY). The development //a// > /iə/ in *draighean* (DD) and /i:/ *draighneán* (TY) would suggest that //a// may have been raised to /i/ before the vocalisation of /ɣ'/ had occurred. This would also explain the Munster developments of *claidheamh*, discussed below. However, the possibility that /i:/ may have developed from the *i*-gliding diphthong /əi/, with loss or reanalysis of onset, cannot be discounted, see discussion of *aidhche* 'night' below.

---

[100]Disyllabic.

[101]Disyllabic [kLẽ:əv'].

[102]Attested in *saighdeadh* /səidu:/ (sic /d/) 'inciting'.

[103]/e:/ = [ɛi] is attested in *saighneáil* from English *sign*?.

Notes on individual words

Claidheamh

The final nasal *mh* is ahistorical in *claidheamh*. The Old Irish form is *claideb*, see DIL, s.v. *claideb*. We suggest below in our discussion of ScG that the nasalisation of the final syllable, implied by the spelling *claidheamh* (attested in the *Irish Grammatical Tracts*), may have originated in the phrase *claidheabh mór* with extension of nasality from /m/ of *mór* to //v// of *claidheabh*.[104] Based on LASID I: 265, the vocalic reflexes of //a// in *claidheamh* may be categorised as follows:

(1) /e:v'ə/ ~ /ẽ:v'ə/	Donegal
(2) /e:v'/ ~ /ẽ:v'/ (/v'/ ~ /f'/)	Donegal
(3) /av'ə/~/ãv'ə/, (/iv'ə/, /ov'ə/)	Connacht
(4) /i:v/, /i:əv/~/ĩ:əv/	Munster
(5) /ajəv/ ~ /ãjəv/, /aiv/ (/v/ ~ /f/)	Munster

It has been suggested that the Connacht forms may derive from *claimheadh* with metathesis, see Skerrett (1963: 117; 1966: 187). While this would explain the southern Connacht forms /kLãv'ə/, it does not, as Skerrett himself points out, account for the absence of */kLãv'u:/ forms in northern Connacht dialects. De Bhaldraithe (ICF: 100) would appear to be correct in suggesting that *claidhmhe* is a back formation based on a plural form such as *claidhmhí*. Such a back formation would satisfactorily explain the Connacht forms (3) and also the Ulster forms (1). If correct, this implies that the cluster //ð'v'// was reduced to /v'/ in Connacht dialects without compensatory lengthening of //a//.[105] This would also account for the short nasal vowel which is found in Connacht dialects.[106] On the other hand the vocalisation of //ð'// has resulted in compensatory lengthening in Donegal dialects. The Donegal forms (2) presumably represent an underlying **claidhmh*, itself a back formation based on a plural form *claidhmhe, claidhmhí* etc. Alternatively the forms listed in (2) may derive from *claidhmhe* with caducous schwa.

We have already noted that the Munster developments /i:/ (IWM), /ai/ (IR) imply that //a// was raised to /i/ before the vocalisation of /ɣ'/ < //ð'//. Note that compensatorily lengthened /i/ yields /ai/ in IR, not /i:/ or /əi/, in a nasal environment, see IR: 22. Cf. /ai/ *im, suim, Ó Floinn, cuimhn(e)*/. The fact that /ai/ rather than /əi/ occurs in this

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[104]The fact that *claidheamh mór* appears to have been a particularly Scottish term coupled with the fact that nasality is frequently noted in this word for northern Irish and ScG dialects, may suggest that the form *claidheamh* may have been a northern, perhaps even Scottish development.

[105]But cf/ /a:/ in pl Connacht form *claidhmhthí* (heard by author).

[106]See O'Rahilly (IDPP: 183).

word would seem to imply that the stressed vowel was nasalised. Compare /ai/ IR: 21-2 with /əi/ IR: 23-4. Alternatively, /i:/ (IWM) may represent a monophthongisation of the diphthong /əi/ following the velarised /L/. Cf. the discussion of *aidhche* below. Similarly the development of an *i*-gliding diphthong in IR might be expected to yield /ai/ in a nasal environment.

Aidhche

Aidhche 'night' is universally realised with /i:/ (or /ĩ:/) in all Irish dialects,[107] see LASID Q. 896, 915, 916, 1043. *Aidhche* derives from an oblique form (presumably the dative case)[108] of Old Irish *adaig*, see DIL s.v. *adaig*. The few instances of /ɯ:/ which occur in northern Donegal dialects, I would explain as retracted [I:] phones after velarised [N] of the article. It could be argued that the modern realisations of *aidhche* presuppose an underlying /i/ before the vocalisation of //ð'//. Spellings with the digraph *oi* which occur from the early Modern period onwards may imply that //a// was raised to /o/ (or perhaps our */o/) and subsequently fronted to /i/. This would imply the following possible development for *aidhche*:

//að'x'ə// > /aɣ'x'ə/ > /(*)oɣ'x'ə/ > /iɣ'x'ə/ > /i:x'ə/

We have seen, however, that diphthongisation to /əi/ is the normal development of //að'C// in Irish dialects. We shall see in a later chapter that this is also the regular development of //oð'C//. It is possible that an *i*-gliding diphthong developed in *aidhche* in Irish dialects in the first instance, cf. ScG /əi/ *aidhche*. I claim that the frequent occurrence of *aidhche* with the article *an* /əN/ (N sg, D sg) may have caused the initial element of the diphthong /əi/ to be analysed as an off-glide from the preceding velarised /N/ of the article. This would have effectively given rise to the monophthongisation of the /əi/ diphthong to /i:/. The strong influence which the article played on the realisation of *aidhche* can be seen in the nasality of the stressed vowel which in all likelihood has developed as a result of the preceding article.[109] This implies the following alternative development for *aidhche* in Irish:

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[107]If we leave aside Omeath, Co. Louth (LASID point 65, see LASID IV: 12 s.v. *oidhche)* and perhaps some speakers from Tory Island, (LASID point 75, see LASID point 65) where [ɯ:] occurs. Hamilton notes [y:ihə] 'irregularly in *oidhche'* (TY: 132). This [y:] which he describes as 'the unrounded German *ü*, French *u*' (TY: 131) is different to [ɯ:] which is 'high back narrow'. I interpret [y:] as an allophone of the /i:/ phoneme, see chapter 2 above.

[108]However, *aidche* was also the accusative and genitive singular form and *aidchi* occurred also in plural forms.

[109]Professor Eric Hamp (1986) explains the nasalisation in ScG *oidhche* as originating in the phrase *oidhche mhath*.

//əN aðˈxˈə// > /əN əixˈə/ > [əNᵊ iːxˈə] = /əN iːxˈə/[110]

Faigh

The verb *faigh-* is usually realised as /fa:/ in Connacht dialects. It is not clear whether this is to be derived from forms with *fagh-* or *faigh-* and will be excluded from the present discussion. The word *maighistir* is realised as /ma:ʃtˈərˈ/ in Connacht dialects. This appears to be an example of the development //a// > /a:/ / __ ɣˈ.

Snaidhm

The synchronic reflexes of *snaidhm*[111] would seem to support the development //a// > */o/ > /i/ in this word. See above for discussion of //a// > */o/ > /i/ in prepalatal environments. The development //a// > /i:/ in northern Connacht and Donegal dialects rules out the possibility of a development (for these dialects at any rate): /sNaðˈmˈ/ > /sNamˈ/ . . . > /sNiːmˈ/. It is possible that an *i*-gliding diphthong /əi/ may have developed which, as we have argued above for *aidhche*, may have been monophthongised to /i:/ following the velarised /N/. Monophthongisation may have been blocked in IR since the diphthong in this word was /ai/ not /əi/.

	IWM	IR	ICF	IT	IE	DD	TY
snaidhm	i:	ai	i:	i (sic)	i:	i:	i:

Table 3A.15

Reduction of //ðv// and //ðˈvˈ// clusters

We have already noted that certain modern reflexes of //aðv// may be explained by the reduction of the clusters //ðv// to //v// before the vocalisation of //v//, e.g. /aur/ < *abhar* < *adhbhar* (IWM),[112] /sau/ < *Sabh* < *Sadhbh*. This reduction of clusters also explains many of the modern reflexes of the words *saidhbhir, saidhbhreas, taidhbhse, daidhbhir, taidhbhreadh* etc. which illustrate the development of //avˈ// rather than //aðˈ//. The following table illustrates the development of these words and the expected developmentof //aðˈ// and //avˈ//:

---

[110]If this is the correct explanation, the development of /i:/ in IR rather than /ai/ would seem to imply that the stressed vowel may not have been nasalised in IR. Note that /ai/ rather than /əi/ tends to occur in IR in nasalised syllables.

[111]This also applies to *maidhm* /mi:mˈ/ in ICF and probably to most other Connacht dialects also although the word does not appear in IT, IE.

[112]However, in the case of Munster /aur/ *adhbhar*, it is conceivable that /au/ represents a secondary development of /a:vər/ with the vocalisation of //v// and coalescence of syllables.

	IWM	IR	ICF	IT	IE	DD	TY
saidhbhir, saidhbhreas	ev'	ev'	ev'	ev'	ev'	[eiv']~ ev'[113]	e:v'[114]
daidhbhreas	--	--	--	--	--	ev'	--
taidhbhse(ach)	əi	əi	aiv'	ev'	ev'	av'	aiv'
taidhbhreadh	--	əi	--	--	--	--	aiv'
//av'V//	?	?	?	av'	ev'	ev'	?
//av'C//	əi	?	aiv'	?	ev'	ev'	av'
//að'//	əi	əi	ai	əi	əi	əi	ai

Table 3A.16

It is clear in most cases that the development of //að'v'// is the same as that of //av'// with the exception of Donegal dialects where the vocalisation of //ð'// appears to have resulted in lengthening to /e:/ before //v'//. This implies that the reduction of //ð'v'// clusters to //v'// in Irish dialects occurred mostly in Munster and Connacht dialects.

//a// __ SON#\+C[+hom]

Lengthening of //a// before //R// is a feature of all Irish dialects. Vowel lengthening and diphthongisation before //L N M// [+/- palatalised] is a feature of Munster and southern Connacht dialects only although there are some instances of lengthening before //L// in northern Connacht and Ulster dialects.[115] Otherwise original //a// is retained in northern Connacht and Donegal dialects. The development of //a// to /a:/ is common before //R// and //L// in most Connacht dialects. Otherwise original //a// is retained. In southern Connacht dialects the development //a// to /a:/ is common before //L N M R L'//; otherwise original //a// is retained. However, /ai/ may occur before //N'C' M'C'//. In Munster dialects, the general development has been //a// > /a:/ before //R//, /au/ before //L N M// and /ai/ before //L' N' M'//.

There is a clear isogloss separating Munster dialects from other Irish dialects in the matter of vowel lengthening before the sonorants //L N M//. Diphthongisation characterises Munster dialects. The retention of original //a// without lengthening characterises Connacht and Ulster dialects; in the few cases where lengthening does occur in Connacht and Ulster dialects, lengthening rather than diphthongisation is the norm.

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[113]Quiggin (DD: 34) implies a difference between *saidhbhir* [eiv'] ~ /ev'/ and *saidhbhre, saidhbhreas* which always have /ev'/. He explains *saidhbhir* /ev'/ as being due to the influence of *saidhbhre(as)*.
[114]Hamilton (TY: 314) transcribes *saidhbhir* as [ɛ:], *saidhbhreas* as [ɛi]. I interpret both as members of the /e:/ phoneme.
[115]Also before certain consonant groups involving /L n r/ in Donegal.

The fact that all Irish dialects lengthen original //a// to /a:/ before //R// would seem to imply that the development is an old one. Our sources indicate that //a// is not diphthongised before //R// in Irish dialects.[116] There are slight differences in the development of //a// before rC groups. This is illustrated in the following table:

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
barr	**a:**	**a:**	**a:**	**a:**	**a:**	**a:**	**a:**
ard	**a:**	**a:**	**a:**	**a:**	**a:**	**a:**	**a:**
tharla	**a:**	**a:**	**a:**	**a:**	**a:**	**a:**	**a:**
tarrtháil	--	--	(a:)	**a:**	**a:**	**a:**	**a:**
tairseach	**a:**	--	--	a	a	ɔ	--
fairsing	a	a	a	a	a	a	a
tart	(a)	a	(a)	a	--	a	a

Table 3A.17

Table 3A.17 shows that lengthening is the norm before *rr* //R// and rC[+voice] groups. However, before rC[–voice] groups, there appears to be two different developments, namely, retention of short /a/ and lengthening to /a:/. Lengthening in the latter environment appears to be marginally more common in some Munster dialects (e.g. *tairseach*). It could be argued that the development of lengthening before rC[–voice] groups is lexically conditioned. However, the fact that lengthening seems to always occur in the case of *tarrtháil* but never in the case of *tart* suggests that the contrasting developments in such cases are to be explained phonologically. *Tarrtháil* is fairly consistently spelled with a double *rr* in our literary sources but *tart* is consistently spelled with one *r*. This and the synchronic evidence suggests that //R// occurred in *tarrtháil* but that //r// occurred in *tart*. This suggests that the regular lengthening of //a// before rC[+voice] groups may be due to the occurrence of //R// in such groups historically.

The only significant minor development is the development of //a// in the oblique form *airde* 'height, higher' which is realised as follows in Irish dialects:

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
airde	i:	i:	ai	o	o	o	i

Table 3A.18

[116]Cf. diphthongisation of //o// in *bord* etc. in some Connacht dialects (ICF).

/o/ realisations (and /ai/ in ICF) reflect an underlying or original **oirde* with */o/ which provides further evidence for raising and rounding of //a// in prepalatal environments, discussed above.[117] On the other hand /i:/ and /i/ realisations reflect the further stages of fronting of */o/ to /i/ with subsequent lengthening to /i:/ where such lengthening occurs. The development of *airde* in Munster dialects implies that the fronting of */o/ to /i/ occurred prior to vowel lengthening before //Rd'// clusters in Munster.

[117]Could the change //a// > /o/ in this case derive originally from the comparative from *airdiu* where the unstressed round vowel /u/ has had the effect of rounding the vowel of the first syllable?

Section B
Development of //a// in ScG

//a//, C ≠ F[+voice], SON#\+C[+hom]

ScG dialects have retained original //a// in most environments other than before fricatives and sonorants. The most significant minor developments of //a// are raising to:

(A) /ɛ/ and less commonly to /e/.

(B) /ɤ/ and less commonly to /o/.

(A) //a// > /ɛ/, /e/

/a// > /ɛ/

The development //a// > /ɛ/ occurs to varying degrees in the environment C __ C, depending on dialect. In W. Rosshire and Kintyre it is especially common in nasal environments (including C __ C'). In Arran it is common before the apicals /s r n/.

The following table illustrates the development of //a// > /ɛ/ in the prepalatal environment. It is clear that the raising occurs only before palatalised apical consonants with the exceptions of *faic(h)eallach, faic(inn), faigh(inn)*, the last two of which are frequently nasalised.

//a// > /ɛ/ / __ C'

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
ainm	ã	ɛ	ɛ	ɛ~a	ɛ	a	ar	ɛ
ainneamh	ã	ɛ[1]	a	ɛ	--	--	--	--
bainne	ɔ̃	ɛ (Ba)[2]	ɛ~a	a	ɛ	a	ã	a
gainmheach	ã	ɛ	ɛ	a	ø	--	a	ɛ
-ai(th)ne	ã	ɛ	ɛ	ɛ~a	ɛ	a[3]	a	a
rai(th)neach	ɛ̃	--	--	ɔ[4]	ɔ	a	ɤ	ɛ~ɔ[5]
maide	ã	ɛ	ɛ	a	ɛ	--	ɛ	ɛ
maith	ã	a	a	a	ɛ	ɛ	ã	a
maidin	--	--	--	--	ɛ	a	--	--

[1]/a/ Ness, Ha, NU, Bb but /ɛ/ Bern, SU, Ba. See DOH: §315.31.
[2]See DOH: §315.32.
[3]See §256 for various forms.
[4]/RɔN't'əx/ SR: §159.6.
[5]/ɔ/ JM.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
faic(inn)	ɛ̃	ɛ̃[6]	ɛ̃~ã	ɛ̃	ɛ	at'	ɛ	ɛ̃~ã
faiceallach	e	--	--	--	ɛ	--	--	--
faigh(inn)	ã	ɛ̃	ɛ̃	ɤ	--	a	ɛ	ɤj
					--			
cait	ɛ	ɛ (Ha)	a	a	--	--	a	a
aiteannach	ɛ	--	--	--	--	--	--	--
caith(eamh)	ɛ	ɛ̃	--	a	--	ɛ	a	a
aideachadh[7]	a	ɛ	--	--	--	--	a~ɛ[8]	a
fhaide	a	--	--	--	--	--	a	--
aireachas	--	--	--	--	--	--	--	--
tairg	a	--	--	--	--	--	ar	a
faire	a	ɛ	--	--	--	--	ar	a
baile	a	a	a	a	ɛ~a[9]	a	a	a
saileach	--	--	--	--	--	--	--	ʃe
ais	a	--	--	a	ɛ	--	--	a

Table 3B.1

The raising of //a// to /ɛ/ may be analysed as follows based on the above table.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
Total returns	20	14	11	14	12	10	16	17
No. of /ɛ/	4	12	7	4	10	2	3	5
%	20	86	64	29	83	20	19	29

Table 3B.2

These results may be represented in graphic form as follows:

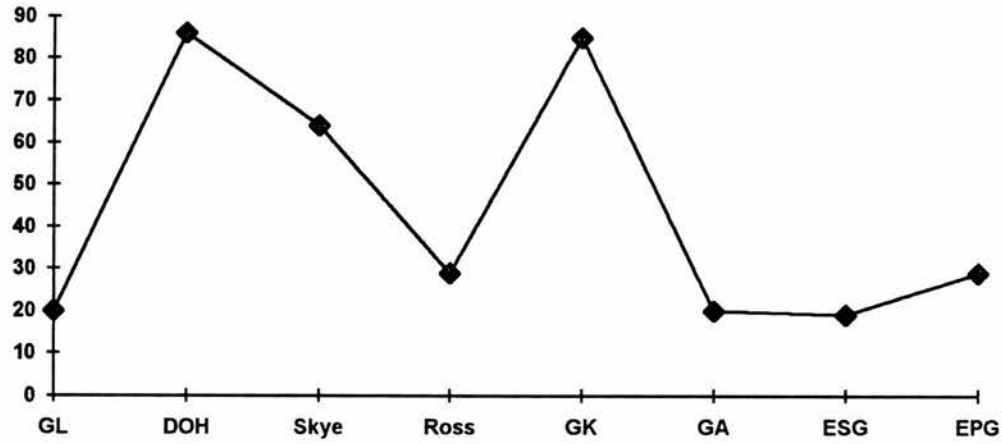

Chart 3B.1

[6]Raising of //a// to /ɛ/ occurs in the words *faic, faigh, faire* but not in 'lenited' forms preceded by /N/. Compare: *gu faic* /fɛ̃x'k'/ ~ *chan fhaic* /Nax'k'/; *gu faigh* /fɛ̃j/ ~ *chan fhaigh* /Naj/; *faire* /fɛr'ə/ ~ *an fhaire* /Nar'ə/. See DOH: §166.1(b). Cf. *'saithne, b'aithne* /ɛ/ but *chan aithne* /a/, DOH: §167.1.

[7]'confessing'.

[8]*aidich* 'admit'.

[9]*baile* /a/ but *bailtean* /ɛ/.

Chart 3B.1 illustrates quite clearly that the raising of //a// > /ɛ/ occurs most commonly in the Outer Hebrides (except in GL), Kintyre and Skye dialects. Further analysis of table 3B.1 in terms of consonantal environment reveals that raising to /ɛ/ occurs most commonly in the vacinity of nasals. It is also particularly common when the vowel is nasalised, e.g. *faic, faigh*. The high figure for the raising in the environment __k', is due to the frequency of raising in *faic* and its derivatives. We have already noted that the raising usually only occurs before originally palatalised apical consonants. This is an entirely natural development given the front quality of palatalised apical consonants.

	__n',N'	**m__**	**faic**	**faigh**	**__k'**	**__t'**	**__θ'**	**__d'**	**__r'**	**__l'**	**__ʃ**
Total returns	41	17	8	7	10	7	6	6	7	9	4
No. /ɛ/	19	8	6	3	7	3	3	1	1	1	1
%	46	47	75	43	70	43	50	17	14	11	25

Table 3B.3 //a// > /ɛ/ / __ C'

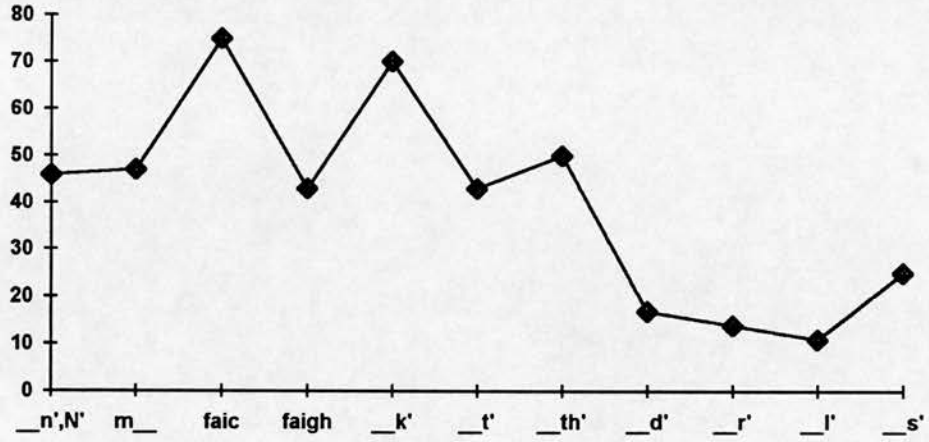

Chart 3B.2 //a// > /ɛ/ / __ C'

//a// > /e/ / __ C'

Words illustrating the development //a// > /e/ occur in table 3B.4. It is clear that the raising of //a// to /e/ occurs mostly in absolute initial position and is particularly common before the palatalised apical //l'//. The development //a// > /e/ is also attested following the velars /g k/ in the prepalatal position, particularly in Arran and Kintyre dialects, in which case /e/ usually alternates with the round vowel /ø/. This will be discussed below.

//a//> /e/ / __ C'

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
aile	e	e	(e)	e	e	e	e	e
ailean	e	e	e	e	e	e	e	e
aileamhain	--	--	--	--	--	--	--	--
air	e	ɛ	ɛ	ɛ	e	e	e	e, ɛ
aige	a	ɛ	ɛ	e	ɛ	a	i	ɛ
aice	e	ɛ	ɛ	ɛ	ɛ	a	ɛ	ɛ
faic(inn)	ẽ	ɛ̃	ɛ~ã	ɛ̃	ɛ	at'	ɛ	ɛ̃~ã
faiceallach	e	--	--	--	ɛ	--	--	--
aide	--	ɤ	--	--	--	--	--	--
aideachadh[10]	e	--	--	--	--	--	--	--
aireachdail	--	e	--	--	--	--	--	e
saileach	--	--	--	--	--	--	--	ʃe

Table 3B.4

(A) //a// > /ɛ/, /e/

The phonological environments for the developments //a// > /ɛ/ and //a// > /e/ are complementary, and therefore most likely represent different outcomes of the same development of raising and fronting. The latter development //a// > /e/ is most common in absolute word initial position before the palatalised apicals //r' l'//; the former //a// > /ɛ/ is common in other prepalatal environments, especially postconsonantally. It is significant that the development *ai-* > *e-* is attested in Middle Irish sources more commonly before //r'// (and //l'//) that before any other consonants, according to the examples cited by Breatnach (1994: 232); these include: *aire* > *heire, aire* > *ere, aireachas* > *erechas, aile* > *ele*. Borgstrøm (DOH: 202, §288) suggests that the development //a// > /ɤ/ which 'supposes a back *a*' is older than the development //a// > /ɛ/ which 'supposes a front *a*'. Borgstrøm unfortunately does not comment on the development //a// > /e/ in his treatment of 'the chief tendencies of phonetic development' (DOH: 199 ff).

It is not clear whether or not instances of //a// > /ɛ/, /e/ involved the intermediate stage of //a// > /o/ or /ɔ/. It is significant that the majority of words for which the development //a// > /ɛ/ is attested are not realised as a round vowel /ɔ/ or /o/ in any ScG dialect; the exceptions *raithneach, bainne* are discussed presently. This alone would seem to rule out the possibility of an intermediate stage involving /ɔ/ or /o/. The words *raithneach,* which is realised as /ɔ/ in some dialects (Ross-shire, Kintyre, EPG) and *bainne*, which is realised as /ɔ/ in some Lewis dialects (GL), are the only

[10]'To educate' etc.

examples which I have noted in the monographs of the development //a// > /ɔ/ in the prepalatal position. The rounding in *bainne* can no doubt be attributed to the labial segment /b/. We may compare the rounding of //a// in *baile* 'frenzy, madness' which survives in the ScG idiom *air bhoil* /vɔl'/. Similarly, the rounding of //a// to /ɔ/ in *raithneach* has no doubt been caused by the velarised initial //R//. The fact that //o// is, in a small number of cases, fronted to /ɛ/, e.g. *soitheach* (DOH: 141) is not in itself sufficient to establish the intermediate development //a// > /o/ in the prepalatal position for ScG. However, in favour of the development //a// > /ɔ/, one could cite *oirleach* /ɔ:/ < //a//, *oirdhearc* /ɔ:/ > //a//.

We claim also that the development //a// > /e/ is unlikely to have involved the intermediate development //a// > /o/ in ScG. The main argument against this is the fact that there is no good evidence for the fronting of original //o// to /e/ in ScG (see chapter 5).[11] If the development //a// > /o/, /ɔ/ had occurred, we would expect it to have occurred before the elements //r' l'//, particularly in absolute initial position. However, *oir* 'edge, border etc.' is always realised as /ɔ/, never /e/ to my knowledge.

We have already noted that the development //a// > /ɛ/ in ScG is unlikely to have involved the intermediate stage //a// > /o/. It follows, if both developments //a// > /ɛ/, /e/ are different outcomes of the same development that //a// > /e/ is also unlikely to have involved the intermediate development //a// > /o/. In fact the distribution of /e/ and /ɛ/ in this word class directly reflects the expected distribution of [e] and [ɛ] vowels generally in ScG, with higher vowels tending to occur before /r' l'/ in most ScG dialects.[12] It is therefore difficult to escape the conclusion that [e] and [ɛ] represent different phonetic or perhaps originally allophonic outcomes of the same underlying development which did not involve the intermediate development //a// > /o/. If this argument is accepted, it implies that original //a// may never have been raised to /o/ (or /ɔ/ or /ɤ/) in the word class {//a// > /e/} in ScG e.g. *aile, ailean, aireachdail* etc. However, the realisation of *aide* 'stepfather' in DOH as /ɤd'ə/ implies that original //a// was raised before //d'// (perhaps, though not necessarily, through the stage //o//) in some words at least before front allophones of //a// had developed in the

[11]Unless we admit the possibility of the development //a// > /o/ > /e/ in *ailean, aile* etc.
[12]It could be argued, although I think it improbable, that //a// may have been raised to [ɛ] or [e] quite early in the history of the language. A later raising of //a// to /ɛ/ may have produced a chain push effect, thus raising the earlier instances of raised //a// (> /ɛ/) to /e/. This is rendered improbable because of the complementary distribution between /e/ and /ɛ/ in this word class.

prepalatal position.[13] We will see below that there is good evidence for the raising of //a// to a close back (round or unround?) vowel in the environment k,g __ C' also.

If //a// > /ɛ/, /e/ did not involve the intermediate stage of //a/ > //o// as we have suggested, how then are we to explain the development? Borgstrøm's suggestion that such developments may only have occurred once //a// had acquired front allophones in the prepalatal position seems plausible. However, we have no way of knowing how early such allophones may have developed in the history of the language, especially in absolute word initial position. We have already suggested that CG //a// may have been a central vowel which was neither front nor back in neutral environments. It is quite possible that CG //a// may have had front allophones before the palatalised front segments //r' l'// quite early on in some varieties. If so, the change //a// > //e// (= /ɛ/, /e/) may have occurred quite early.

The development //a// > /e/ in particular may not have been a purely phonetic-phonological development in absolute word initial position. It is possible to explain many cases involving #//ar'// > #/er'/ as being due morphological substitution or to analogy with the preposition *air*. This may for example explain the development > /u/ in *airfeid* (PDSG), see table 3B.5 below. It is surely significant that the majority of words in the word class {#//a// > #/e/} contain the preposition *air*, see table 3B.5 below.

Alternation between *air* and *er* is common in words containing the preposition *air* in Old Irish sources.[14] Now Thurneysen notes that instances of *er-* in Old Irish indicate

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[13]That //a// in *aide* was not generally fronted to /e/ may be due to its frequent occurrence with the first person singular possessive pronoun *mo* in the phrase *m'aide*, which may have had the effect of rounding the vowel to /o/. For an example, see *m'oite* 'of my tutor', Breatnach (1994: §3.4, p. 232). Borgstrøm (DOH: 202, §288) also notes that the development //a// > /ɤ/ presupposes a back /a/.

[14]The variant *er* is decidedly more common in the Milan glosses than in other Old Irish sources, GOI: §823. This variant which implies //e// is likely to have represented a dialectal variant. Given the prepondernace of instances of //a// > /e/ in initial position in words containing the preposition *air* in ScG, it is tempting to speculate that the Milan glosses may represent a Scottish variety of Old Irish. Further research into the language, orthography and lexicon of the Milan glosses may corroborate this view. The coupling of the elements *fán* 'slope' and *ard* 'height' which is witnessed in the Milan glosses (*etir fán 7 ardd* (Ml 140a2), translated by the editors as 'both valley and height' (Stokes 1901: 474)) is attested in Scottish place-names but to my knowledge, not in Irish place-names, see Ó Maolalaigh (1997). Dr T. Clancy, University of Glasgow, once suggested to me that the word *erelc* 'snares and ambushes', which is only(?) attested in the Milan glosses (Ml 30a3, 28c1), is attested in Scottish place-names but apparently not in Irish place-names. For examples, see instances of *Elrick* in Watson (1926: 137, 184, 489). In this context we may note that the Milan glosses provide us with two occurrences of /e/ in the word *ailithre*: *i n-eilithri* (Ml 137b7), *elithrigmi* (Ml 46c22), see GOI: 308-9. It may be significant that this word is realised with /e/ in all varieties of

that the *r* was non-palatal (GOI: §823). However, given established variation between *air-* and *er-*, a form *eir-* i.e. with /e/ followed by palatalised r could conceivably have developed. We have already noted earlier that the majority of Breatnach's (1994: 232) examples for the change *ai-* > *e-* in Middle Irish sources involve words of the shape # __ r', l'. This morphological alternation could have given rise to phonological alternation between //ar'// and //er'// and spread to words not containing (or at least not transparently containing) the preposition *air*. Indeed it could even have spread from the environment # __ r' to the phonetically similar environment # __ l', thus affecting words like *aile, ailén, ailithreach* etc. Thurneysen (GOI: 308) suggests that Old Irish *eilithri* for **ailithri* may be due to contamination with *eile* which itself, according to Thurneysen, 'represents perhaps a blend of **aile** and **éle**'. Our discussion of the development //a// > /e/ has provided an alternative interpretation of the facts, both synchronic and diachronic, which may be further tested with the publication of the *Survey of Gaelic Dialects*.

One question remains to be resolved, however. If //a// > //o// did not take place, why then is the word class { //a// > /e/ / __ r' l'} so consistently written with *oi* from the Middle Irish period to the present day.[15] One reason for this might be that when //a// was raised to /e/, a preceding consonant was not palatalised in sandhi, thus giving the impression of a 'broad' vowel. The symbol *oi* would be ideal to express both the height and the non-palatalising effect of the vowel on a preceding consonant in sandhi.

Similarly, it could be argued that when absolute word initial //a// was raised before //l' r'//, it gave the impression of an *o* vowel, though not necesarily identical to original //o//. In other words raised //a// in this position may have contrasted with original //o// either in degree of height or rounding or both. There is some evidence to suggest that original raised //a// and original //o// have, in most instances, been distinguished before the segments //r' l'//. Compare the realisations of the words *oirbheart, oircheart(ach), oircheas, oirthir (< airear)* from the word class { //a// > /e/ / __ r'} with *oir, oirleach* which belongs to the word class {//o//} in table 3B.5 below.

The modern reflexes of the word classes { //a// > /e/ / # __ r'} and { //o// / # __ r'} imply that both classes continue to be differentiated in ScG. It could be argued,

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ScG. Given the similarity between the Milan forms and modern ScG, it is tempting to speculate that the Milan glosses may well be our earliest source for Scottish Gaelic, or at least for Scotticisms.

[15] *Eilean* 'island' is one of the few exceptions to this in modern ScG which is consistently spelled with *e* rather than *oi*, presumbaly because in sandhi, the initial vowel has the effect of palatalising a preceding consonant e.g. the article.

however, that the difference in treatment is explicable by reference to the syllabic count of individual lexical items, with a preference for /ɔ/ in monosyllables, and a preference for /e/ in polysyllables. For further evidence of the non-merger of //a// and //o// in the prepalatal environment, see the discussion below of the developments //a// > /o/, /ʏ/ in the environments C __ r', l'.

Evidence for the development //a// > /ɔ/ / __ l', r'

There is some evidence for the development //a// > /ɔ/ / __ l' r' in ScG although its significance is not altogether apparent. Since evidence for the raising of original //a// in initial position is quite meagre in the available mongraphs, I have interviewed three native speakers of Gaelic in order to elicit some more examples. These are contained in the following table.

//o// / # __ [16]

JMI = John MacInnes (Skye); MML = Morag Macleod (Sgalpaidh); Allan MacDonald (Moidart)

Words	**JMI**	**MML**	**AMD**	**PDSG**
//a//				
oilbheum < //a//	/ɔ/[17]	/ɔ/	/ɔ/	--
ge b'oil le < //a//	/ɔ/	/ɔ/	/ɔ/	/ɔ/
oirdhearc < //a//	/ɔ:ɾ/[18]	/ɔ:ɾ/	/ɔ:/	[o][19]
oirbheart < //a//	/[er'e]vərt/[20]	--	--	--[21]
oircheart(ach) < //a//	/[er'e]x'ərt(əx)/[22]	--	--	--
oircheas < //a//	/[e're]x'as/~-/əs/[23]	--	--	--
oirbhir[24] < //a//	--	--	--	--
oirear[25]	--	--	--	--
oirthir[26] < //a//	?	/ɔr'h/[27]	/ɔr'h/	/er'ir'/

[16]-- in this table indicates that the form is not attested, e.g. in PDSG, or that the word was not used by or was unknown to the speaker.

[17]Not /ʏ/ according to JMI. JMI is suspicious of /ɔ/ in this word and feels that it is a literary pronunciation, perhaps originating in an ecclesiastical context. This was the view of the other speakers also. It occurs frequently in the Bible.

[18]JMI feels that this may be an ecclesiastical form and adds that it may have been influenced by *òr* 'gold'. Cf. EDGL: s.v. *òirdheirc*. This view was also expressed by MML. It is not clear if this word derives from *ardairc* with original non-palatal //ɾ// or whether it derives from *airdirc*, where the *r* would have been depalatalised (or alternatively never been palatalised) before the dental //ð'//.

[19]Dieckhoff distinguishes between three types of *o*: [ò] 'very open o'; [o] 'an intermediate o'; [ó] 'a very close o', PDSG: xvi.

[20]'progress'; JMI's mother's form.

[21]But /[er'e:]wer't'/ *eirbheirt* 'power of motion, energy' may be the same word, see PDSG: s.v.

[22]JMI's father's form, e.g. in *gnìomh oircheartach* 'a charitable act'.

[23]JMI's father's form.

[24] 'reproach', Dwelly, s.v.

[25]'pleasant', Dwelly, s.v.

Words	JMI	MML	AMD	PDSG
oirfeid[28] < //a//	--	--	/ɔr'/[29]	/[uru:]fed'/
oiris[30] < //a//	--	--	--	--
oirichill < //a//	--	--	--	--
oilithreach < //a//	/el'ɛrəx/	/el'ɛrəx/[31]	/el'ɛrəx/	--
oirbheir(each) < //o//?[32]	--	--	--	/[ɤr'e:]wer'/
//o//				
oir[33] < //o//	/ɔr'/	/ɔr'/	/ɔr'/	/ɔr'/
oirleach < //o//	/ɔ:r/	/ɔ:rl'/	/ɔ:rl'/	/ɔ:/
oireamhain[34] < //o//	--	--	--	--
oireil[35] < //o//	--	--	--	--
foirfe[36] < //o//	/f[er'e]fi/ ~ /fɔr'fi/, /fɔr'fə/[37]	--	--	/furfə/

Table 3B.5

A consideration of the table 3B.5 indicates that /ɔ/ appears as a reflex of original //a// in a number of words of the shape # __ l' r'. These words are *oilbheum, oil* (in the phrase *ge b'oil le*), and *oirdhearc* all deriving from original //a//. We have already noted that *oilbheum* with /ɔ/ may be a literary pronunciation since it occurs frequently in the Bible. However, we should not perhaps rule out the possibility of influence or contamination with the semantically close *toibheum* 'reproach' which is pronounced with /ɔ/.[38] We have also noted, in agreement with Macbain, that *oirdheirc* may have been influenced by the semantically similar *òr* 'gold'. This leaves *oil* in the phrase *ge*

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[26]'coast', Dwelly, s.v. This is usually spelled *oirthir*, as if it derived from *oir* + *tìr* in ScG. This is of course, originally a folk etymologisation which has affected the development of the word. The original word was *airer* (DIL s.v.). The association with *oir* 'border' has blocked the depalatalisation of //r'// which we might expect in the group //r'θ'//.

[27]MML felt that this was a literary word and perceived that it contained the element *oir* 'boundary + *tìr* 'land, country'.

[28]'music, melody', Dwelly, s.v. but 'a great noise', PDSG: s.v..

[29]Only knew it as a literary word.

[30]'delay', Dwelly, s.v.

[31]MML adds that she learnt this at school rather than at home. It means 'emigrant' to her. To AMD it means 'stranger'.

[32]'noble rank', PDSG: s.v. Perhaps related to or influenced by *oirbemandae* 'inherited, hereditary', see DIL s.v. Cf. also **orb(b)am* 'heir', see DIL s.v..

[33]'margin, border', Dwelly, s.v. Also *oirearach* /ɔr'ərəx/ 'out on the margin'; *na hoirearaich* /ɔ/ (heard in Duirness by JMI) 'people living in marginal places'.

[34]'fitness', Dwelly, s.v.

[35]'meet, proper', Dwelly, s.v.

[36]'perfect'.

[37]JMI claims to have heard all three forms. He regards the /ɔ/ forms as being 'spelling pronunciations'. This would seem to be supported by the lack of svarabhakti syllables in the forms /fɔ r'fi/, /fɔr'fə/, which would be the natural realisation of *-rf-* clusters in modern ScG. However, since *foirfe* derives from *foirbhthe*, we would expect a svarabhakti syllable in this word. Incidentally, *foirfe* provides a similar example to *colpa* < *colbtha* which illustrates that svarabhakti vowels must have developed before the reduction of the dental fricative //θ//.

[38]JMI has heard the following forms: /tɔfəm/, /tɔ've:m/, /tɔifəm/, /tɔivəm/.

b'oil le. I would explain the development in this case as being a genuine instance of the raising and rounding of original //a// following the labial /b/ of the copula. With this we may compare the development, alluded to above, of //a// > /ɔ/ in *bail* in the phrase *air bhoil* (personal observation).[39] We may also compare the rounding of //a// in *bainne, raithneach* discussed above. Similarly we may add *Maire* > *Moire* '(the virgin) Mary' /ɔ/ generally in ScG. We may compare the raising and rounding of //a// to /ɔ/, /o/ (and in one case /u/) in the word *boireannach* < *baineannach*, with dissimilation between the nasal consonants producing /r'/ for /n'/:

	GL	DOH	S	R	GK	GA	ESG	EPG
boireannach	ɔ	o	ɔ	o	--	or	u	o

Table 3B.6

Our discussion has cast serious doubt on the purely phonological development development //a// > /ɔ/ before palatals in ScG other than when preceded by labials (/b m/) and rarely /R/, the majority of instances being explicable as spelling pronunciations.

(b) //a// > /o/ , /ɔ/ / __ C

In Eastern ScG dialects, //a// is raised and rounded to /o/ and /ɔ/ before //L// and //l//. In ESG, Brora and Golspie raise //a// to /o/ before originally tense //L//, to /ɔ/ before //l//. Similarly in EPG, //a// is rounded to /ɔ/ before the segments //l L N//.

//a// > /o/, /ɤ/ / __ C'

The development of //a// to /ɤ/ and less commonly to /o/(?) is illustrated in the following table:

[39]JMI informs me that *boil* was used in Uist for a specific disease which attacks the brain of animals, including horses. He has heard it used in the phrase *ghabh e boil ~ a' bhoil*, which clearly must have originally meant something like 'it went mad, crazy'.

//a// > /o/, /ɤ/ / __ C'

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
aide	--	ɤ	--	--	--	--	--	--
gaid	ɤ	ɤ	ɤ, o(Dunv)	ɤ	e/ø	e/ø	e(B,G),ɤ (E)	ɤ
gail	ɤ	ɤ	ɤ, o (Dunv)	ɤ	e/ø	e/ø	a(Nth), ɤ(E)	ɤ
gair(m)	ɤ	ɤ	ɤ	--	--	--	--	ɤ[40]
gairid	ɤ	ɤ	ɤ	ɤ	e/ø	a	e(Nth), ɤ (St	ɤ
caileach	a	ɤ	ɤ, o(Dunv)	ɤ	e/ø	e/ø	a	ɤ
caire(ach)	a	ɤ	ɤ, o(Dunv)	ɤ	--	--	a[41]	ɤ
cainneall	--	--	ɤ	--	e/ø	e/ø	--	ɤ
taigh[42]	ɤ	ɤ	ɤ	a	e/ø	e/ø	ɛ	ɤ/(a)
traigh	ɤ, (a?)	ɤ	ɤ	ɤ	a[43]	a[44]	--	a~ɤ[45]
tairbh	ɤ	ɛ	ɤ	a	--	--	--	ɤ
sgairbh	ɤ	ɤ	--	a	ø~e	--	--	--

Table 3B.7

It is significant that the raising of //a// to /ɤ/ (/o/?) occurs mostly in words of the shape C __ C' where C = /k g/ and C = /d' l' r'/. The raising and rounding of //a// to /o/ in the prepalatal position is rare in the ScG dialects investigated for the purposes of the present study; we have noted some instances of /o/ < //a// in *boireannach* above. The publication of the *Survey of Gaelic Dialects* will undoubtedly provide more instances of the development //a// > /o/. We have already noted (see chapter 2) that Borgstrøm's interpretation of the 'mixed flat' [o] in some Skye dialects (e.g. Dunvegan) may be incorrect, or at least open to another interpretation; rather than representing a member of the /o/ phoneme, it may well be a positional variant of the /ɤ/ phoneme in these dialects. The implication of the latter interpretation would be that the rounding of this 'mixed flat' [o] is secondary and due to the preceding velar segments /k g/. This raises some doubt therefore with regard to the rounding of //a// to /o/ in earlier stages of ScG in the prepalatal environment. According to the evidence in the available monographs, rounded vowels for //a// in the prepalatal environment only occur following the velars /k g/. Inflected forms of words like *tarbh → tairbh, sgarbh → sgairbh* do not appear to have reflexes with rounded vowels synchronically. We

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[40]*goirsinn* < //a// 'crowing'.
[41]*cairinn*.
[42]*taigh* may in fact derive from *toigh*.
[43]*traigh* 'foot (of measure)'
[44]*traigh* 'foot (of measure)'
[45]*traigh* 'foot (of measure)'

cannot of course be absolutely certain whether or not rounded vowels existed in such inflected forms diachronically.

There are two possible explanations of the development //a// > /ɤ/ / __ C' in ScG. These are: (i) //a// was rounded to /o/ (or /ɔ/), i.e. merged with //o// which was in certain environments subsequently unrounded to /ɤ/; (ii) //a// was raised (to [ɤ], [ɸ] or [o]?) without merging with original //o//. In favour of the former, we may cite instances of rounded vowels (members of /o/ or /ɤ/ but not /ɔ/) occurring in certain Skye dialects and perhaps also /ɸ/ in Arran and Kintyre dialects. However, rounded reflexes of //a// do not in themselves imply a merger between original //a// and original //o//. In fact, as we shall see below, rounded reflexes of //a// before palatals are usually differentiated from reflexes of original //o// in similar environments. We may also note in support of the merger hypothesis the fact that the development //o// > /ɤ/ in the prepalatal environment is attested in ScG, e.g. *soilleir* //o// > /ɤ/ (DOH: 201), although the parallel development is not in itself a convincing argument for a merger. Moreover, we conclude in chapter 5 that unrounding of original //o// before palatals occurs normally only before the palatals //L' N'//, not before //d' l' r'//, the environments in which //a// has frequently been raised. Words of the shape k g __ d' l' r' listed in table 3B.7 are normally cited as evidence for the unrounding of original //o//. However, *all* of these words derive from original //a//. I have noted no instances of original //o// > /ɤ/ / k g __ d' l' r' in the ScG monographs.

Against the development //o// > /ɤ/, it could be argued that the development //o// > /ɤ/ may in fact have involved the intermediate development //o// > /a/.[46] In favour of the latter suggestion, we may note that there is some evidence that original //a// and //o// in the prepalatal environment have been kept distinct, despite the raising of //a// in some words. The continuing contrast between the two word classes {//a// > *oi*} and {//o//} in ScG dialects is illustrated here by the representative examples *coire* //o// 'corrie, kettle etc' and *caire* //a// 'fault, guilt, cause, reason':

	GL	**DOH**	**Skye**	**Ross**	**GK**	**GA**	**ESG**	**EPG**
coire	ɔ	ɔ	ɔ	ɔ	or	ɔ	ɔ	ɔr
caire(ch)	a	ɤ	o~ɤ	ɤ	--	--	ar	ɤr

Table 3B.8[47]

[46]This has not been previously suggested presumably because it is more economical (and logical?) to asssume that //o// > /ɤ/ has retained its height rather than being lowered only to be raised again.

[47]Palatal /r'/ is retained except when otherwise indicated.

Reflexes of //o// in *coire* are usually low back round vowels /ɔ/ (but see /o/ GK). Reflexes of //a// in *caire* on the other hand vary between /a/, /ɤ/ and /o/(?). In all dialects where both words are attested, reflexes of *coire* and *caire* are kept distinct and provide good minimal pairs for the oppositions /ɔ/~/a/, /ɤ/ or /o/. Jackson (1955: §4, §14) notes that reflexes of //a// and //o// in the prepalatal environment are always kept distinct in Manx. To this we may add the evidence for the maintenance of the contrast between //a// > /e/ and //o// > /ɔ/ in the environment / # __ l' r', discussed above. The evidence of *coire~caire* suggests that when //a// was raised, while still a non-front vowel, it did not merge with original //o//. The *coire~caire* contrast provides another possible example of what Labov (1994: 349 ff) refers to as a *near-merger*. For examples from English, see *source~sauce; fool~full, cot~caught; too~toe; beer~bear, meat~mate* (Labov *op cit*).

The ScG case is slightly different in that the merger between the word class {*coire*}and {*caire*} has not, to my knowledge, been reported phonetically or phonologically by native speakers, although it has been implicitly accepted amongst Gaelic scholars. The merger is implied only by the modern orthographical form of each word class. This case in point argues strongly against assuming a neat one-to-one correspondence between orthographic graphemes and phonemes, see chapter 1. The concept of *near-mergers,* however, supports the possibility of both word classes having been kept distinct over the centuries, even though the linguistic feature which differentiated them once //a// was raised, may have been minimal and one which may not normally have functioned to distinguish word classes (Labov 1994: 20). The fact that both word classes were originally and are synchronically differentiated by means of a phonemic contrast //o// ~ /a/, /ɔ/ ~/ɤ/, /o/, does not necessarily mean that the distinction was always so. Indeed the consistent spelling of both word classes with the grapheme *o* might suggest that there was a period in the history of the language, following the raising of //a// in the word class {*caire*}, when the distinction between both classes was subphonemic, perhaps even being imperceptible to some speakers. This would imply that //o// words remained in the (low) mid position while the //a// class rose past the (low) mid position, without merging with the //o// class. Referring to the near-merger of *meat* and *mate*, Labov (1994: 384) describes a similar situation in Belfast English: 'Lengthened ĕ words were shown to have remained in mid position while the originally long word class rose past mid position, without joining them'. That the symbol *o* should have been used to represent this raised //a// is no surprise since there was no other symbol available to represent a mid back vowel following non-palatal consonants.

The concept of near-merger suggests as a possibility that at the time of raising of //a//, the traditional 5V vowel system may not have been a characteristic of ScG. It must, nevertheless, remain a possibility that ScG may have possessed an additional back or central phoneme (perhaps = /ɤ/ or /ɸ/), realised as [ɤ], [ɸ] or [o], which contrasted with original //o//. This possibility raises the question of the existence of peripheral and non-peripheral vocalic tracks in the Gaelic languages. This patterning of the phonological vocalic space is well documented for Germanic and Baltic languages (Labov 1994: 388). The investigation and further exploration of such questions are, however, outwith the scope of the present thesis.

In the case of the pair *caire* ~ *coire*, the avoidance of homophonic clash could account for the contrasting developments. However, the fact that the development //a// > /ɤ/ (and /o/ marginally) occurs in a well-defined word class {//a// / k g __ d' l' r'//} argues against the homophonic argument which usually only occurs in isolated words rather than in word classes.[48]

[48]For a possible instance of the avoidance of homophonic clash, see *croit* /ɔ/ 'small of the back' and *croit* /ɤ/ 'croft' EPG. For a further possible instance, see Hughes (1992).

__ F[+voice]

The general development of word internal fricatives has been one of weakening with or without resultant compensatory lengthening in most dialects.

__ F[+voice] [+labial]

The main developments of //av// and //aṽ// sequences may be illustrated by the following representative words:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
avV								
sabhal	o	--	o	[o-u]~ [ɔ-u]	--	--	--	ɔu
gabhar	o	o	o	[o-u]~ ɤu	o	o	o(:)~əu:	ɔu
abhag[49]	--	--	[a-u]	[a-u]	--	--	--	--
labhairt	--	au (Ba)	--	--	av	av	--	--
cabhag	af	av (Ba)	--	--	--	--	--[50]	av
avC								
sabhlaichean	o:	--	--	--	--	--	--	--
slabhraidh	--	--	--	--	--	--	əu:	a·u
abhrad	--	--	--	--	--	--	o:~əu:	--
aṽ#								
damh	ăv	ăv	--	ɛ̆v	--	ăṽ	ăũ	ăw
aṽV								
gamhain	ăv	ăv(Ha)~ ăũ (Ba)	ăw~ăũ ~a	ăũ	ɛv	av	--	ăũ
aṽC								
samhradh	ăũ	ăũ	ăũ	ăũ	ɛv	ăṽ	ăũ:	ă·ũ

Table 3B.9

The development of //av// sequences has not developed uniformly in all instances. Original //v// appears to have been lost word internally in most Scottish Gaelic dialects with the exceptions of the dialects of Kintyre and Arran where it has frequently been retained. However, it must be said that there are few suitable examples of //v// either in intervocalic or preconsonantal position. There appears to be two major developments of //av// sequences in ScG: (a) what appears to be an earlier one illustrated by *sabhal, gabhar* which parallels the development of //ov// and (b) a later one illustrated by *abhag, labhairt*.[51] The earlier development results in the

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[49]*abhag* 'terrier' is realised variously as /a-əg/, /au-əg/, /avəg/ in ScG dialects. I am grateful to Dr J MacInnes for this information.

[50]Unfortunately not transcribed phonetically or phonemically, ESG: 170.

[51]*Labhairt* may not be an entirely reliable example since, occuring frequently in the Bible, its realisation may be indicative of high registers of the language.

rounding of original //a// to /o/ and the loss of the labial fricative. Realisations are usually monophthongal although diphthongs are attested in some Eastern dialects (ESG, EPG) and, depending on our interpretation of [o-u] and [ɔ-u] sequences, perhaps also in Wester Ross. It is not clear in these cases where //av// has resulted in a short rounded monophthong whether //a// was rounded to /o/ before the loss of the fricative or whether the loss of the fricative resulted in the simultaneous rounding of the vowel //a//.[52] Words whose realisations include /au/, /a/ and [a-u] are likely to represent a later development of //av// sequences.[53] The vocalisation of the fricative in the latter has resulted in the development of a [u] vowel which may be analysed as belonging to the first (stressed) syllable or the second (unstressed) syllable. It is possible that the former development //av// > /o/ may have involved the intermediary stage of //av// > [au] > [o] with monophthongisation of the diphthong [au] to [o] but this is not certain and is perhaps unlikely. The retention of an [a] vowel in *labhairt* may, as we have suggested, be due to conservative high register literate forms. The retention of the [a] vowel in *abhag*, however, is not so easily explained. In short, the different treatment of //av// in *sabhal, gabhar* as opposed to *abhag, labhairt* leads one to speculate two separate developments of //av// for ScG.

It may be significant that *sabhal* and *gabhar* can be traced back to historical forms whose second (unstressed) syllables contained a rounded [u] vowel: *gabhar* < *gabor/gobur* (DIL s.v. *gabor*), *sabhal* < *sabull* (< Latin *stabulum*, see DIL s.v. *saball*).[54] It is possible that the labial fricative coupled with the following rounded vowel had the affect of rounding, by assimilation, the first stressed vowel in such words. If correct, this would imply that the rounding of //a// > /o/ in these words occurred (i) before the reduction of unstressed vowels to /ə/ and (ii) before the vocalisation of intervocalic bilabial fricatives. In otherwords it would imply that the rounding in *gabhar, sabhall* may be as old as the Old Irish period. There are no instances of **sobhal(l)* cited in DIL. However, for insances of *gob(h)ar* in Irish sources, see DIL s.v. *gabor*.

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[52]The latter would imply the development //avə// > [owə].

[53]When intervocalic //v̆// (and //v//?) is lost, //a// is diphthongised in some dialects to /au/ e.g. Harris, Uist, Barra, Skye (mostly), EPG; //a// is retained in others without lengthening or diphthongisation e.g. the Skye dialects of Kilmuir, Portree and the dialect of Raasay (personal observation).

[54]Instances of [o-u] for *gabhar (sabhall)* in Ross-shire are unlikely to derive from or reflect Old Irish spellings *gabor/gabur*. However, such realisations illustrate how a labial fricative may have the effect of rounding unstressed vowels (when vocalised?). Bergin (1907: 76) makes a similar suggestion in a different context.

Cabhag, a loanword from English *havoc*, according to O'Rahilly (1926: 28), has developed differently to //av// in most dialects. Even in those dialects where intervocalic //v// has generally been vocalised, the labial fricative has been retained in *cabhag*. There are two possible explanations for this: (i) *cabhag* was borrowed after the vocalisation of original intervocalic //v//. The latter would seem to be supported by the fact that English *v* was borrowed as /f/ in some Lewis dialects.[55] However, (recent?) English *v* has generally been borrowed as /v/ in GL e.g. *covrigeadh* /kʏvrig'ə ɣ/ (< cover), *clever* /klʏvər/, *favour* /fa:vər/. If our suggestion is correct, then a date for the borrowing of *havoc* into Gaelic might provide a tentative *terminus ante quem* for the reduction of intervocalic labial fricative //v// in Gaelic; (ii) the vocalisation of //v// is a relatively late development which has not yet spread to *cabhag* etc. The latter suggestion seems unlikely since the retention of //v// following short vowels[56] is restricted almost entirely to a set of English borrowings; if correct, it would imply that the set of English assimilated loanwords are somehow marked differently to 'native' lexical items. It seems more plausible to suggest that these *v*-words were borrowed after the period of vocalisation of native //v//.

The sequences //av// (in some words at least) and //aṽ// have developed differently in most ScG dialects, as the following table illustrates:

	GL	**DOH**	**Skye**	**Ross**	**GK**	**GA**	**ESG**	**EPG**
abhV	o, ?	o, au	o, [a-u]	[o-u], [ɔ-u]	o, av	o, av	o(:) ~ əu:	ɔu
abhC	o:, ?	--	--	--	--	--	o:~əu:	a·u
amh#	ãv	ãv	--	ɛ̃v	--	ãṽ	ãũ	ãw
amhV	ãv	ãv(Ha)~ ãũ (Ba)	ãw~ãũ ~a	ãũ	ɛv	av	--	ãũ
amhC	ãũ	ãũ	ãũ	ãũ	ɛv	ãṽ	ãũ:	ã·ũ

Table 3B.10

Original //a// is more usually retained before original //ṽ// than //v//, even in diphthongs. Compare ESG /əu:/ < //av// ~ /au:/ < //aṽ//. This implies a preference for the low vowel /a/ in nasal environments rather than a raised /ɔ/, /o/ or [ə] as the initial element of a *u*-gliding diphthong. This is also further reinforced by the development of //a// before the tense sonorants //L N//, on which see below (especially ESG).
Similarly it is clear that the labial fricative has been retained more frequently when it derives from nasalised //ṽ// than from //v//. The different development of //a// before

[55]/v/ appears to occur in GL when preceded by a nasalised /ã/. Cf. the occurrence of /v/ in the loanword *sàbh* /sa:v/ < English *saw*, see GL: 354.
[56]Cf. *diabhal, dìobhairt* where //v// is retained.

original //ṽ// and //v// may be accounted for by reference to (i) the nasality of vowels preceding nasalised //ṽ// and/or (ii) the vocalisation of //v// having occurred prior to the vocalisation of //ṽ//. In some dialects (e.g. GK) where original //v// and //ṽ// are both retained as labial fricatives, the difference in outcome is expressed in the quality of the preceding vowel: /av/ < //av// but /ɛv~ɛṽ/ < //aṽ// (GK).

It also follows that labial fricatives are more likely to be retained intervocalically and word finally than preconsonantally in ScG dialects. The available evidence implies that historically, the vocalisation of non-nasalised //v// occurred earlier than that of nasalised //ṽ//. The vocalisation of //ṽ// is more likely to occur preconsonantally rather than intervocalically or word finally.

It is interesting to note that some eastern dialects (e.g. EPG) maintain a contrast, based on length, between original //avV// and //avC// sequences. The vocalisation of prevocalic //av// results in a short diphthong /au/ *abhainn*, /ɔu/ *sabhall* but the vocalisation of preconsonantal //av// results in the development of a long diphthong e.g. /a·u/ *slabhraidh*. The difference between /au/ and /a·u/ is one of length approximating to the difference between short and long vowels respectively.[57]

Abhainn

Abhainn is realised as follows in ScG dialects:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
abhainn	ãv	ãũ (Ba) ~ãv (Ha)	ãũ ~ ãw ~ ã	au[58]	av	av	--	au

Table 3B.11

The stressed vowel in *abhainn* is nasalised in most Hebridean dialects. It has not been recorded as nasalised in other dialects (R, GK, GA, EPG). A comparison of the realisation of *abhainn* with reflexes of original //aṽ// shows clearly that original //a// in *abhainn* has developed in the same manner as //a// in //aṽ// sequences in those dialects where the reflex of the stressed vowel in *abhainn* is nasalised. In those dialects where the stressed vowel of *abhainn* is not reported as being nasalised, //a// has developed in the same way as //a// in original //av// sequences. We have therefore established an isogloss separating the Hebridean dialects from mainland ScG dialects, based on the

[57]See EPG: 83 ff.

[58]Not transcribed by Borgstrøm with nasalisation.

nasality of the vowel in reflexes of *abhainn*.[59] In Hebridean dialects, it follows that the nasality of the unstressed syllable *-ainn* and /or the nasality of a preceding article *an* (nominative singular feminine and dative singular) has spread to affect the stressed syllable *abh-*, presumably before the vocalisation of //v//.[60] This would imply an underlying **amhainn* */avĩiN'/, or */ãviN'/ or */ãvĩN'/ for Hebridean dialects as opposed to *abhainn* /aviN'/ in Mainland dialects. We may also deduce from this that nasalisation may have spread to the first syllable of *abhainn* in ScG before the development //a// > /o/ / __ v. Cf. *abhainn* /o:/ (DD), /õ:/ (TY).

Amhran

Reflexes of *amhran* in ScG dialects are as follows:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
amhran	au[61]	ɔ:	ɔ:	ãũ	--	o:	ãũ:	ɔ:

Table 3B.12

Modern realisations of //a// in *amhran* tend to be non-nasal with the exception of dialects of Ross-shire and East Sutherland. Nasalised tokens, perhaps significantly, occur only with the diphthong /ãũ/. There are three main outcomes of //a// in *amhran*, namely, /ɔ:/, /o:/, /au/, the latter being nasalised or not. The development //a// > /o:/ most probably involved the intermediate development //a// > /o/ with rounding of //a// to /o/ before the labial fricative, unless /o:/ derives from /au/ which is otherwise generally unattested in ScG. The loss of nasalisation generally in this word may have arisen in the phrase *gabh amhran* /gav ãvĩra(:)n/ by assimilation[62] between the two labial fricatives or alternatively by dissimilation of nasalisation between the first and second syllable of *amhran* itself.[63] In any case the development //a// > /o:/ in *amhran* reflects the earlier development of //av// as witnessed in the words *sabhal, sabhlaichean, gabhar*. If, as we have argued, the development //av// > /o:/ is indeed an old one, then the development *amhran* > *abhran*, with loss of nasalisation of //vĩ//, must in turn be older in order for the development *abhran* > *obhran* /o:ran/ to have

[59]The publication of the *Survey of Gaelic Dialects* will enable us to draw this particular isogloss with considerably greater accuracy.

[60]The possibilty of the nasalisation of //v// having first arisen in syncopated forms such as *aibhne, aibhnichean* etc. cannot of course be discounted.

[61]There is no nasalisation implied here. See also DOH: 208 where Borgstrøm notes that the stressed vowel in *amhran* is non nasal in Lewis dialects.

[62]We have noted the opposite tendency, i.e. dissimulation in the case of *gamhain* (EPG) where the synchronic form indicates that the nasality of //vĩ// was lost before the vocalisation of the fricative. Cf chapter 8.

[63]Research of the occurrence of nasality in higher registers, especially song registers, vis-a-vis normal speech may ultimately provide another explanation for the loss of nasalisation in *amhrán*.

taken place. That //ṽ// had lost its nasality before the rounding and lengthening of //a// in *amhran* seems to be supported by the fact that /o:/ and /ɔ:/ seem never to be nasalised in this word. For instances of the form *abhrán* in the literature, see DIL s.v. *amrán*. The development //a// > /o:/ in *amhran*, in the absence of other evidence for most dialects, would appear to represent the general development of //a// before non-nasal //v//. Compare //avC// > /o:/ (GL, ESG). If /o:/ is the regular reflex of //avC//, how then are we to explain /ɔ:/ in DOH, S, EPG?[64] It is possible that the compensatory lengthening of //a// before //v// may have resulted in /ɔ:/ rather than /o:/ in some dialects although this seems unlikely based on the available evidence. It would seem that we have to do here with the lowering and unrounding of /o:/ to /ɔ:/. Such a development is perhaps best explained as a shift towards the unmarked member in the opposition /ɔ:/ ~ /o:/. Cross contamination with or influence from other words containing /ɔ:/ should not, however, be ruled out. It is conceivable, for example, that *òran*, itself being an oral delivery, albeit musical, may have been affected by *òraid* 'speech, oration, essay, prayer', see Dwelly s.v. *òraid*.

//av'//, //aṽ'//

It is impossible to comment with any accuracy on the development of //v'// (intervocalically, word finally (in monosyllables) or preconsonantally) as there are insufficient examples in the available sources to illustrate it. The only examples which I have succeeded in locating are *aibhne* (G), *aibhnichean* (pl) which, as we have remarked above, are not entirely suitable examples since the stressed syllable of *abhainn, aibhne* etc. appears to have been nasalised in some dialects; realisations of these words are therefore more likely to represent the development of //aṽ'// rather than //av'// in some dialects. All dialects have /ai/ in this case which is the normal development of //aṽ'C//, e.g. *aimhreid* /ãi/ (GL). We have no way of knowing, based on the sources used for the purposes of the present study at least, whether the development of //av'// was different to the development of //aṽ'// in Scottish Gaelic dialects.[65]

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[64]Cf. unexpected /ɔ:/ in DD *amhrán*.

[65]Cf. discussion of the development of //av// and //aṽ// above.

__ F[+voice][+dental]\[+velar]

The dental and velar fricatives have been lost in all positions following stressed //a// in ScG except in some instances in word final position in monosyllables and at morpheme boundaries where they have in some dialects been retained as /ɣ/ < //ð/ɣ// or /j/ < //ð'/ɣ'//. An intervocalic fricative may be retained when it is followed by a morpheme boundary, e.g. *lagh+ail* /Lɤɣal/ GL.[66] When fricatives are lost intervocalically, there is usually no coalescence of syllables in ScG dialects, with the exception of ESG and EPG. Argyll dialects (GK, GA) have developed glottal stops which mark the syllable boundaries once occupied by the fricatives.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
adh#	ɤ	ɤɣ	ɤɣ	ɤɣ	e~ɸɣ	--	ɤ	ɤ
adhV	ɤ	ɤ	ɤ	ɤ	e~ɸ	e~ɸ	ɤ	ɤ, ɤɣ
adhC	ɤ:	ɤ:	ɤ:	ɤ:	e:~ɸ:	e:~ɸ:	--	ɤ:

Table 3B.13

The development of //a// preceding intervocalic //ð, ɣ// has universally been /ɤ/, which corresponds to /e, ɸ/ in Kintyre and Arran. Preconsonantally, //að/ɣ// has in most cases yielded /ɤ:/ which corresponds to /e:, ɸ:/ in Kintyre and Arran. I have noted only few exceptions to this. These are /a:/ *Raghnall* (S), /a:/ *adhlacadh*, /o:/ *laghach*[67] (EPG). The development //a// > /o:/ in *laghach* recorded from one speaker, is peculiar, but nevertheless significant in that it implies a different development for //aɣ// in this lexical item. It is not clear if syllables of the shape //a// + preconsonantal //ð/ɣ// developed svarabhakti vowels between the fricatives //ð/ɣ// and the following C. If so, the development of //a// > /ɤ/ could be described as the general development of //a// before prevocalic //ð/ɣ//. In such a scenario, we would have to posit the development of /[a-ə]/ or /[ɤ-ə]/ or /[ɤ-ɤ]/ > /ɤ:/ preconsonantally (where [ ] indicates svarabhakti syllables). However, it is not necessary to describe the domain of the development //a// > /ɤ/ in ScG as being restricted to the intervocalic position. The development is also attested before //ð/ɣ// at word and morpheme boundaries. In other words there is good evidence to suggest that the development //a// > /ɤ/ is universal before //ð/ɣ// in all environments in ScG. How then do we explain the developments in *Raghnall* /a:/ and *adhlacadh* /a:/ above? Clearly these words indicate that the development //a// > /ɤ/ had not occurred before the vocalisation of the fricatives //ð/ɣ// in these words.[68] The development of /a:/ therefore would appear to

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[66]Compare *draghail* /drɤɣal/ EPG where *dragh* is realised as /drɤ/.

[67]Usually /ɤ/ but one speaker JM has the form /Lo:x/, discussed above in section A.

[68]It is conceivable, however, that *Raghnall* was borrowed in some dialects after the raising of //a// > /ɤ/.

represent an earlier development than that of //a// > /ɤ/, /ɤ:/. Could it be that the divergent development in these words is to be explained as being due to the lack of the development of svarabhakti vowels in these instances? Certainly we would not expect the development of a svarabhakti vowel in the cluster //ðl// (*adhlacadh*) while the dental articulation of //ð// persisted. It is therefore tempting to postulate that the development of //a// > /a:/ in *adhlacadh* at least is an old one which may have occurred before the development //ð// > //ɣ// in ScG. (Could these developments be due to Irish biblical or literary influence?) The development > /a:/ in *Raghnall, adhlacadh* could well represent a relic dialectal variant development of //aɣC//, which has in most cases been replaced by /ɤ:/.

The development of //að'/ɣ'// may be illustrated by the following table:

//að'/ɣ'//

	GL	**DOH**	**Skye**	**Ross**	**GK**	**GA**	**ESG**	**EPG**
aigh#								
laigh	aj	--	--	--	--	aj	ɔi	aj
faigh	ãj	ɛ̃j[69]	--	ɤj	ɛ(j)	aj	ɛ	ɤj
aidh/ghV								
saighead	ɛ	ɛ	ɛ	a-i	a	a	--	ai
laighe	aj	ai~ɛ	--	a-i	a	a	ɔi	ai
faighinn/ean	ãj	ɛ̃	ɛ̃	ɤ-i	--[70]	aj	e:	ɛi~əi
naidheachd	ɛ	ɛ	--	ai	aj	ɛj	e[71]	ɛ, a
claidheamh	ãj	ai	ɛ	a-i	--	a	ɔi	ai
aidh/ghC								
saighdear	əi	əi	əi	əi	aj	aj	əi:	ə·i
maighdean	ə̃ĩ	--	əi	--	aj	aj	--	(ɛi)[72]
aidhche	əi	ə̃ĩ(H), ũĩ(B)	əi	əi	øi	y:~ỹ:~ø:	əi:	ə·i
saidhbhir	əi	ai	ai	--	--	--	e:	--
faighnich	ə̃ĩ	əi	əi	əi	--	--	--	a·i
snaidhm	ãĩ	ai(H), ui(B)	ai	ai	--	--	e:	a·i
taigh	ɤj	ɤj	ɤj	aj	ej~øj	ej~øj	ɛ	ɤj
taighe(an)	ɛ	ɛ	ɛ	ah	a-i, e-i	a-i	--[73]	ai
traigh	ɤj	ɤj	ɤj	ɤj	aj	aj	--	ɤj, aj
traighe(an)	aj~ɤj	--	--	--	a	--	--	--

Table 3B.14

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[69]Cf. *gu faigh* /fɛ̃j/ with *chan fhaigh* /Naj/.

[70]GK uses *faotainn*.

[71]Monosyllabic.

[72]The short diphthong here implies an underlying *maighidinn*, as spelled by Ó Murchú or alternatively that this word is a borrowing from English *maiden*.

[73]Plural = /tro:r/ (sic).

I provide here a summary account of the development of //oð'/ɣ'//, summarised from chapter 5, for the purposes of comparison:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
oighV	ɤ	ɤ	ɤ	--	--	--	--	əi, əə
oighC	əi	əi	əi	əi	e:~ø:	--	--	ə·i, ɛ·i

Table 3B.15

The occurrence of /a/ including initial /a/-diphthongs for //a// may be analysed as follows:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
Total	17	14	12	13	11	13	11	15
/a/	7	4	2	7	8	10	0	9
%	41	29	17	54	73	77	0	60

Table 3B.16

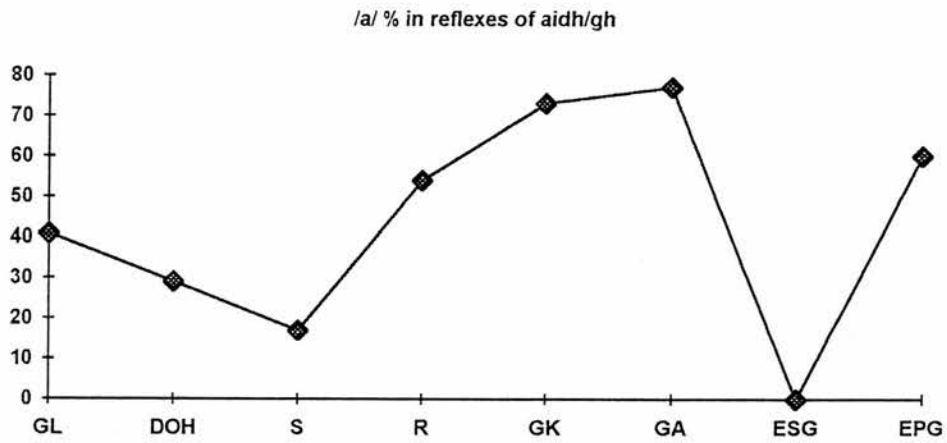

Chart 3B.3

It is clear that the retention/occurrence of /a/ in tokens of original //að'/ɣ'// sequences is least common in GL, DOH, S and ESG and most common in R, GK, GA, EPG. Leaving aside the rounding of //a// to /ɔ/ in ESG following /L/, the main developments of //a// before stressed word final and intervocalic //ð'/ɣ'// are /a/, /aj/, /ai/, /ɛ/, /ɛj/. There is a noticeable difference in distribution between /a/ and /aj/, /ai/ on the one hand, and between /ɛ/ and /ɛj/ on the other. Instances of /aj/, /ai/ are more common than instances of /a/. In contrast, instances of /ɛ/ are more common than instances of /ɛj/. This implies that reflexes of the original spirant //ð'/ɣ'// are more likely to survive following /a/ than /ɛ/. Similarly when //a// is raised to /ɛ/, it is more likely that all segmental traces of the spirants are lost. In some dialects, where //a// > /ɛ/ is

common, //a// has frequently been retained as /a/ when //ɣ'// occurs at a word or morpheme boundary (e.g. *faigh(+inn), laigh(+e)* GL).

Raising of //a// to /ɛ/ before stressed word final and intervocalic //ð'/ɣ'// is most common following (i) the labial /f/ (e.g. *faigh, faighinn*),[74] (ii) in nasal environments (*naidheachd*; also *faigh, faighinn* whose stressed vowel is frequently nasalised), and (iii) following /s/ (e.g. *saighead*). It is least common following velarised /L/ (e.g. *laigh, laighe, claidheamh*).

There are a few instances of the development //að'/ɣ'// > /ɤj/, [ɤ-i] in word final or intervocalic position. It is significant that the only example which I have noted is *faigh, faighinn* (R, EPG). Since /ɤ/ is the regular development of original //o// in this environment, it could be argued that //a// was rounded to /o/ or */o/ in *faigh* in these dialects and subsequently unrounded to yield /ɤ/. However, the possibility that original //a// was raised in this word but not necessarily rounded to merge with original //o// should not be discounted. Cf. our discussion of the development //a// > /ɤ/ in ScG above. If correct we could add initial /f/ to the list of favourable environments for the development of //a// > */o/ > /ɤ/ / C __ C'.

Taigh or toigh?

The modern reflexes of the word *taigh* are intriguing. Originally an oblique form, modelled on another s-stem *magh ~ maigh(e), taigh(e)* displaced the original *tigh* form,[75] still current in Connacht and Munster Irish dialects. See GOI: §338. The development *maigh(e) > moigh(e)*, regular after the labial /m/ (see GOI: 80 for details), may in turn have affected the subsequent development of *taigh > toigh*.[76] The most common reflex in ScG of //a// in *taigh* is /ɤj/ (/ej/~/ɸj/ in GK, GA) which is precisely the development of //oɣ'//. This would seem to lend some support to the suggestion that *taigh* became *toigh* at an earlier stage of the language. It is also possible that //a// in *taigh* may have been raised but not have merged with original

[74]The raising in *faigh, faighinn* may well have more to do with the fact that the stressed vowel is frequently nasalised than the fact that the preceding segment is a labial /f/. The nasalisation of *faigh, faighinn* may be explained as arising in instances such as *chan fhaigh* which spread to the verbal noun *faighinn*. Alternatively the nasalisation may have arisen in the first instance in the verbal noun, with nasalisation spreading from the unstressed syllable *-inn* to the stressed initial syllable *faigh-*. Cf. *claidheamh* etc.

[75]The *tigh* form was in common use in literary writings of the present century in ScG.

[76]That *t(a)igh* should have been influenced by *maigh* etc. is partially explained given the relationship between members of the closed set of adverbs *ist(a)igh, isteach* and *amuigh, amach* which contain the elements t*(a)igh* and *maigh*.

//o//, as we have posited for the word class {*caire*} above. Similarly since /ɛ/ is not a regular reflex of //oɣ'//, we may assume that instances of /ɛ/ in the plural *taigh(th)ean* reflect the raising of an underlying //a//, rather than the fronting and unrounding of //o//. This adds the following further instances of a contrast in development between nominative singular and plural forms: /ʏj/ ~ /ɛ/ (< //a//) GL, DOH, S.

It may be significant that /a/ appears to have survived more commonly in the genitive singular form *taighe* and in the plural form *taigh(th)ean* than in the nominative. Compare *taigh* ~ *taigh(th)ean*: /ej/, /ɸj/ ~ /a-i/ GK, GA; /ʏj/ ~ /ai/ EPG. This may lend added support to the hypothesis that the vocalism of nominative (originally dative) *t(a)igh* was affected by dative *maigh/moigh*. In such a scenario, we might expect genitive and plural forms not to have been affected by analogy with *maigh/moigh*. Levelling with the nominative form accounts for those dialects which have the same vocalism in all case forms.

Claidheamh

The stressed vowel in *claidheamh* is realised as follows in ScG:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
claidheamh	ãj	ai	ɛ	a	--	a	ɔi	ai

Table 3B.17

/ãj/ is reported by Oftedal to be nasalised but not by other investigators. The retention of //a// in GL (and possibly also in other dialects) may partly be due to the nasalisation of the stressed vowel, since we have already noted a tendency for nasalised /ã/ not to be raised. It is possible that the nasalisation of /ã/ in *claidheamh* has spread from the unstressed syllable *-amh* to the stressed *claidh-* (cf. *abhainn*); alternatively the nasalisation of the first syllable may have originated in sycopated forms such as *claidhmhe* etc, see DIL s.v. *claideb*. However, it is not entirely clear how the unstressed syllable came to be nasalised[77] in the first place since historically *claidheamh* derives from *claideb* with final non-nasalised //v//. Could it be that the nasalisation of *claideb* may have originated in the noun phrase *claideb mór* with reassignment of nasality? It is worth noting that the frequent use of this noun phrase in ScG gave rise to the English loanword *claymore*.

[77]This is implied by the spelling *claidheamh*.

When //a// preceded preconsonantal //ð'/ɣ'//, the development has on the whole been /əi/ in most 'central' dialects, /aj/, /ai/ being common in the peripheral dialects of GK, GA, EPG. Leaving aside *saidhbhir* and *snaidhm* which are frequently realised as /ai/, it is clear that the development of //a// before preconsonantal //ð'/ɣ'// is the same as that of //o// before preconsonantal //ð'/ɣ'//. We cannot, assume, however, that the development //a// > /əi/ / __ ð'/ɣ'C implies the raising of //a// to /o/ before the vocalisation of the spirants //ð'/ɣ'//. It is, however, possible that //a// may have been raised without having merged with //o// (cf. {*caire*} above) before the vocalisation; this would also explain the development of a /ə/-initial diphthong rather than /ai/. It is equally possible that /əi/ represents a development of an original /ai/ (/aj/) diphthong whereby the initial element has been centralised.

The development of /ai/ in *saidhbhir, snaidhm* in those dialects (e.g. GL, DOH, S, R, EPG(?)) for which /əi/ might be the expected development of //a// before preconsonantal //ð'/ɣ'// can, however, be explained in another way. The development in both of these words can be plausibly explained if we posit the early reduction of the clusters //ð'v'//, //ð'm'// without compensatory lengthening of the preceding vowel. All modern reflexes of both words may be derived plausibly from the forms **saibhir, *snaim* with the regular development of [i] glides before originally palatalised labials.[78]

[78]We have no certain examples which would illustrate the development of //av'V//, //aM'// but the development of *i*-gliding diphthongs before originally palatalised labials is common in ScG.

Consequences of the development of //að/ɣC// in ScG

The development of reflexes of //að/ɣC// and *ao* //əː//, //að'/ɣ'C// and *aoi* //əː// in ScG may be set out as follows (see also maps 8a and 8b):

	GL	DOH	Skye	Ross	Kint	Arran	ESG	EPG
//að/ɣC//	ɤː	ɤː	ɤː	ɤː	eː~øː	eː~øː	--	ɤː
//əː// / __ C	ɯː	ɯː	ɯː	ɯː	eː~øː	eː~øː	ɤː	ɯː
//að'ɣ'C'//[79]	əi	əi	əi	əi	aj	aj	əiː	ə·i
//əː// / __ C'[80]	ɯː, ui,[81] əi[82]	ɯː, ui	ɯː, ui	ɯː, ui	eː~øː, ei[83]	eː~øː, ei[84]	ɤː	ɤː~ɯː[85], u·i[86]

Table 3B.18

It follows that reflexes of //að/ɣC// and //əː// are kept distinct in all ScG dialects with the exception of GK, GA where they have merged. Dilworth (1995/96: 44) also notes that such a merger to /ɤː/ has also occcurred in West Perth, West, South West and Mid Argyll. We may summarise by noting that south western ScG dialects have merged reflexes of //að/ɣC// and //əː// either as /eː/~/øː/ or /ɤː/ whereas other dialects have maintained the distinction between both. Where both types are distinguished, reflexes of //əː// are high back unrounded /ɯː/.

It is clear from table 3B.18 that reflexes of //að'/ɣ'C'// and prepalatal //əː// are distinguished in all ScG dialects. The development of //əː// in the prepalatal position is not, however, as straight forward as //əː// before non-palatals. Diphthongs frequently occur expecially when //əː// occurred before palatal fricatives in inflected forms of nouns, e.g. *gaoith(e), laoigh*. It is significant that in most cases where diphthongisation is the reflex of //əː// the first element is a high back vowel, phonetically [u] or [ɯ]. It is not clear if diphthongs whose first elements are mid vowels represent the original development or whether they are secondary developments from an original /ui/-like diphthong (e.g. /əi/ GL, /ei/ GK, GA).

It is likely that //əː// deriving from the Old Irish diphthongs *ai, ae, oe, oi* was realised as a mid vowel with variation between front and back realisations throughout the

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[79]Based mainly on realisations of *saighdear*.
[80]In this table I have transcribed [ɯi], [ui] as /ui/.
[81]Following /L/, /m/.
[82]/əi/ usually before original palatal fricatives, GL: 90.
[83]In *laoigh* (G sg and N pl).
[84]In *laoigh* G sg and N pl).
[85]Variation between /aː/, /ɤː/, /ɯː/ in *faoilte*, see EPG s.v. *fàilte*.
[86]In *laoigh* (G sg, N pl).

dialects. O'Rahilly (IDPP: 31) concludes that 'such evidence as we possess points strongly to *ao* having been pronounced in the Late Middle Irish period, and quite possibly earlier still, as a mid mixed, and probably unrounded, vowel, identical, or nearly so, with the *E:* of S. Ir. to-day'. We may compare Ó Murchú's use of the symbol /ə:/ to represent this phoneme. O'Rahilly (IDPP: 32-3) does not offer any explanation for the raising of original //ə:// to /ɯ:/ in ScG other than to state that the raising was due to 'the tendency . . . to raise vowel-sounds under the influence of a neighbouring nasal consonant'. This explanation will clearly not do, not least because it accounts for only a relatively small number of cases. It is our contention that the raising of //ə:// in ScG occurred as a push chain affect when the fricatives //ð/ɣ// were vocalised preconsonantally. The vocalisation of these fricatives resulted in the lengthening of original //a// (and //e//) to /ɤ:/ in most dialects. The raising of //ə://, perhaps phonetically [ɤ:], occurred, or so we claim, in order to avoid merger with the new long monophthongal reflexes of //að/ɣ//. It is unclear how the Argyll evidence should be interpreted. There are two possibilities: (a) the vocalisation of //ð/ɣ// led to the merger of //ə:// and //að/ɣC//; (b) the vocalisation of //ð/ɣ// led to the the raising of //ə:// to /ɯ:/ (or /y:/) but that /ɯ:/ (/y:/) later merged with /e:/~/ø:/. We prefer explanation (a).

__ SON#\+C[+hom]

//a// has been lengthened to /a:/ before //R//, //rC[+voice]// in all ScG dialects except ESG where it has generally been lengthened and raised to /ɔ:/. Diphthongisation of //a// before //R//, //rC[+voice]//, although not attested in the sources used for the purposes of the present study, has been attested in some dialects, e.g. *ard* /aurd/ Rannoch, Perthshire, see Dilworth (1995/96). Before the other sonorants //a// has been retained in the peripheral dialects GK, GA, EPG.[87] There is insufficient evidence in the ScG monographs to comment on the main development of //a// before //rC[–voice]// in ScG dialects. However, the available evidence suggests that lengthening of //a// in these environments is not common. Otherwise *u*-gliding diphthongs have developed before the non-palatal sonorants //L N M//. Similarly, *i*-gliding dipthongs have developed before the palatalised sonorants //L' N' M'//. The initial element of such diphthongs is usually always //a//, except in ESG where a more centralised initial element /ə/ may occur. The development of //a// before sonorants in ESG may be summarised as follows:

[87]However, diphthongisation does occur in some words before //N'// (and rarely before //N//) in EPG.

//a//	→	/əu:/~/au:/	/ __ L
		/au:/	/ __ N, M
		/əi:/	/ __ L'
		/əi:/~/ai:/	/ __ N'

Where variation exists, Brora and Golspie prefer /ə/-initial diphthongs whereas Embo prefers /a/-initial diphthongs. It is significant that all dialects agree in having /au:/ before the non-palatal nasal sonorants //N M//, and /əi:/ before the palatalised non-nasal sonorant //L'//. This distribution seems to imply a preference for /a/-initial diphthongs in nasal environments and /ə/-initial diphthongs in non-nasal environments. Once again it is not clear if the development //a// > /əi:/, /əu:/ is to be explained (a) as being due to the raising of //a// prior to the period of diphthongisation before the originally tense sonorants, or (b) as a development which pertains to diphthongs, whereby the initial element //a// tends to be centralised in non-nasal environments.

Some minor developments are discernable before the nasals //N//, //M//. In GK, //a// is raised to /ɛ/ before //M//. In EPG, //a// is rounded frequently to /ɔ/ before //N//.

The oblique form *airde* of the adjective *ard* is usually realised as /a:/ in our sources. However, /ɤ:/, /ɯ:/ occurs in EPG, which would seem to imply the raising of //a// before the lengthening occurred before the group //Rd'//. It is significant that the resultant vowel is unrounded /ɤ(:)/, /ɯ:/. This would seem to support our earlier suggestion that when //a// was raised, it did not necessarily merge with original //o//. Otherwise, we might expect /ɔ:/ (or /o:/) *in airde*.[88]

	GL	**DOH**	**Skye**	**Ross**	**GK**	**GA**	**ESG**	**EPG**
airde 'higher' etc.	a:Rdə	--	a:Rsd'ə	a:Rdə	a:rd'ə	a:rd'ə	--	ɤ(:)/ɯ:rd'
an airde 'up'	a:Rdə	--	--	a:Rdə	--	--	o:rd	a:rd'

Table 3B.19

[88] *an ard/an airde* /(ə) no:rd/ ESG: 109. It is not clear whether *ard* or *airde* is the correct derivation here. Unfortunately, *ard* is not attested in ESG. On the rounding of //a//, compare *àrlas* /ɔ:rləs/ ESG: 163.

Section C
A Comparison of the Development of //a// in Irish and ScG

Original //a// has generally been retained in Irish and ScG dialects except in the environment of sonorants and original fricatives. The raising of //a// (to /e/ in Irish and to /e/, /ɛ/ and /o/ in ScG) is common to both languages. Other apparent differences in development are due to differing phonemic inventories,e.g. //a// > /ɤ/ in ScG. The development of //a// > /i/ is, however, only attested in Irish. Similarly, there is no evidence for the destressing of originally stressed //a// in Scottish (or Ulster) dialects in words with 'heavy' or sonorant second syllables.

The Irish developments //a// > /e/, /o/, /i/ and the Scottish developments //a// > /e/, /ɛ/, /o/, /ɤ/ may be related since they both occur in similar phonological environments and in similar word classes. These developments in each language may be summarised as follows:

	Irish			**ScG**
Environments	**Munster**	**Connacht**	**Donegal**	
# __ l', r', d'	**i**, e	**e**, (i)	**i**, e	**e**
g,k __ l', r', d'	**i**	**e**, o, i	**i**, o	**ɤ**, (o?)[1]
s __ r', l'	**i**	**e**	e, **i**	**e**[2]

Table 3C.1

The word classes for each environment are as follows:[3]

{//a// / # __ l', r', d'}
Irish: {*aileamhain, ailte, aileán, ailithreach, aile, aideachas, aireachtas*}
ScG: {*aileamhain, ailean, aile, aide, aideachadh, aireachdail*}

{//a// / g, __ l', r', d'}
Irish: {*caileach, cair, gairm, gaid, gaile, (gairid)*}
ScG {*caileach, cair(each), gairm, gaid, gail, gairid*}

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[1] /e/~/ø/ GA, GK.
[2] *saileach* /ʃe/ EPG.
[3] It is worth noting that only a small number of the words in question can be explained as deriving from the morpho-phonological products of slenderisation. For instance *gail* could conceivably derive from *goil*, an oblique form of *gal*, see DIL s.v. *gal*. However, the occurrence of *gail* /a/ in Irish and ScG probably rules this out.

{//a// / s __ r', l'}
Irish: {*sair*}
ScG: {*saileach, sair* (?)}[4]

It follows from a comparison of Irish and ScG dialects that //a// has been raised in both languages (a) in common well-defined and restricted phonological environments, i.e. before the voiced palatalised apicals //l' r' d'// and (b) in more or less the same set of lexical items. We also note that in Irish dialects raised //a// has usually been fronted, either to /e/ or /i/, depending on dialect, but also to a certain extent, on the lexical item in question. It is significant that this raised //a// has not usually been fronted when it is preceded by the velars //k g// in ScG, and in some cases in Irish, most notably in Connacht and Donegal, where //a// > /ɤ/ (ScG), //a// > /o/ (Irish) occurs.

We have seen that there is evidence in ScG and in Donegal Irish dialects that raised //a// did not merge with original //o// in most instances. Jackson (1955: §4, §14) also points out that reflexes of //o// and raised //a// were kept distinct in Manx. This is clear from the following tables:

//a//	**Donegal**	**ScG**	//o//	**Donegal**	**ScG**
cair	/i/	/a/, /ɤ/, /o/	coire	/ɔ/	/ɔ/
gail(e)	/a/, /o/	/a/, /ɤ/, /o/	sgoil	/ɔ/	/ɔ/
airead	/or/, /er/	/ur/	[f]oir	/ɔ/	--
gairid	/e/, /o/, /i/	/a/, /ɤ/	goireadh	/ɔ/	--
aircheart	--	/e/	oir	--	/ɔ/

Table 3C.1: Irish and ScG

//a//		//o//	
kerraghey < cair	[e]	corkey < coirce	[ɑ]
gerrym < gairm	[e], [ɪ], [ɛ]	gort < goirt	[o:], [ɑ:]
gerrey < gaire[5]	[e]	--	--
geid < gaid	[ø], [i:], [e]	--	--
kellagh < caileach	[e], [a]	schoill	[ɔ(:)], [o(:)]

Table 3C.2: Manx, forms from Broderick (1984, vol. 2).

Based on the synchronic evidence for differentiation between raised reflexes of //a// and original //o// in the prepalatal position, this suggests an isogloss separating Scotland, Man and Ulster from Connacht and Munster Irish dialects. However, it is

[4]*sair/soir* is not attested in the monographs but /ʃɛr'/ is the common form in ScG. I have heard *shoir* /ɔ/ in songs, e.g. *Laoidh Fhraoich*, but Dr John MacInnes informs me that this pronunciation is definitely literary, not colloquial.
[5]Broderick (1984, vol. 2: s.v. *gerrey*) is surely incorrect in deriving this word from *giorra*. Jackson (1955: 27) derives it more plausibly from *gaire*.

possible that reflexes of //a// and //o// were also kept distinct in Connacht and Munster dialects, the distinction between them being lost only when //o// was fronted to /e/ (Connacht), /i/ (Munster). Similarly the raising of //a// to /i/ is a western phenomenon, being attested only in Irish dialects.

Let us first deal with the fronting and raising of //a// to /e/. There is good evidence in both Irish and ScG for the raising and fronting of //a// to /e/ in absolute initial position particularly preceding the segments //r' l'//. That this development is attested in Old and Middle Irish sources would seem to imply a development //a// > /e/ without an intermediate stage of //a// > (*)/o/. However, an intermediate stage //a// > (*)/o/ cannot be totally ruled out. It is possible that instances of //a// > /ɛ/ in ScG may only have occurred when original //a// had developed front allophones in the prepalatal environment, thus representing a later raising of //a// than that of //a// > /e/.

Our discussion of the Irish and ScG evidence suggests that original //a// may have been raised and merged with original //o// following labials only. This is reflected in Old Irish spellings such as *moirb* etc. However, the continuing differentation between reflexes of //o// and raised //a// in the environments, i.e. #, k, g __ l' r' suggests that //a// did not merge with original //o// in such cases. We have suggested that both word classes {//o// / #, k, g __ l' r'} and {//a// > *oi* / #, k, g __ l' r'} were distinguished, although it is not clear whether or not the feature which differentiated them was phonemic or subphonemic. We tentatively suggested that the non-merger between both classes pointed towards the possibility of a separate vowel phoneme */o/, thus providing some extra corroborative evidence for Pedersen's phoneme /o̤/. We have also suggested that in earlier stages of the language there may have been genuine instances of //a// > /o/ due to morpho-phonemic alternation between //a// and //o// rather than reflecting a phonetic change *per se*. It was also suggested that the development of some words in the word class {//a// > *oi* / #, k, g __ l' r'} may have been influenced by such morpho-phonemic alternation. However, such an explanation does not explain why reflexes of raised //a// synchronically contrast with reflexes of original //o// in similar environments in many Gaelic dialects. The continuing distinction between reflexes of original //o// and raised //a// in the environments # k g __ l' r' d' suggests that raised instances of //a// developed along a central rather than a peripheral path. In particular, it suggests that the Gaelic phonological vowel space is best viewed as a three-dimensional rather than two-dimensional space. It was not possible to develop or further explore this concept in the present thesis.

The fact that the Irish and ScG developments occurred in practically identical phonological environments and word classes suggests that these developments were established before the period at which Irish and ScG began to diverge and may even have occurred as early as the Old Irish period itself. The evidence discussed implies that the change was both phonologically and lexically conditioned.[6] (Cf. Labov: 444) The raising of //a// may reflect the beginning of a change in progress which, for whatever reasons, was never universally applied.

It is possible, although the practically identical word classes in both languages would seem to rule against it, that both developments may have occurred independently, see below on lengthening before sonorants. It may be significant in this context that some ScG dialects, particularly north and north western dialects, have /a/ corresponding to /ɤ/ (or /o/) from original //a// in a subset of the word class {//a// > *oi* / #, k, g __ l' r'}, including *caileach, caire(ach), glaine, traigh, taigh, gail, gaile, gairid, aile, ailean* (see GL, ESG). It is not clear in such instances whether or not /a/ represents (a) original //a// or (b) a secondary lowering of an originally raised //a//, i.e. (*)/o/ > /a/.[7] If we accept (a), then it is possible that the raising of //a// > /ɤ/, /o/ did not fully penetrate the northern areas to the same extent as it did in others.

What, we may ask, is so special about the environments #, k, g __ l', r', d' that original //a// was raised in both languages in a small but practically identical word class? It has not been hitherto noted that the functional load of the opposition between original //a// and neighbouring original //o// has always been extremely low in the environments #, k, g __ l', r', d'. A search of Ó Dónaill's FGB using the Gléacht package, provides the following statistics for the occurrence of *o* in these environments. In columns three and five, I have only given the number of independent morphemes. The symbol + indicates that for any given morpheme there may be a number of derivations based on it. For instance, *oideachas, oideas* etc. have been included as a derivative of the morpheme {*oid-*}.

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[6]Not all instances of //a// were raised in these environments, cf. /a/ *cailín* (Ir), *caileag* (ScG).
[7]Compare the development //o// > /a/ in *croiceann, broilleach*, e.g. in GL.

Environments	No of lexemes with *oi*	No of morphemes from //a//	(Recent) loanwords	Total no. of words from //o//
# __ l'	26	4+	4	0
# __ r'	59	1+	c. 5	4+
# __ d'	14	1+	1	0
k __ l'	28	3+	19	1+
k __ r'	55	1+	c. 16	7
k __ d'	3	0	3	0
g __ l'	6	5	0	1
g __ r'	11	0	1	2+
g __ d'	1	1	0	0

Table 3C.3

The morphemes containing original //o// in each environment are as follows:

Environments	Total no. of morphemes with *oi*	No. of morphemes containing /r' l'/	Morphemes
# __ l'	0	0	--
# __ r'	4	2	{*oir* 'edge'}, {*oir-* 'fitting, suitable'}, {*oirn-* 'ordain'}, {*oirneach* 'bits}
# __ d'	0	0	--
k __ l'	1	1	{*coilgn-* 'prickle'}[8]
k __ r'	7	5	{*coirb* 'yoke'}, {*coirce* 'oats'}, {*coire* 'pot'}, {*coireán* 'campion'},{*coirm* 'ale'}, {*coirthe*}, {*coirleach*},[9]
k __ d'	0	0	--
g __ l'	1	1	{*goil* 'crying'}
g __ r'	2	1	{*goire* 'piety'},[10] {*goirt* 'bitter'}
g __ d'	0	0	--

Table 3C.4

We may reduce the number of morphemes containing original //o// preceding //l' r' d'// (as indicated in column 3) if we exclude instances of the following *r* clusters, //rn', rl', rθ', rt'// where *r* is unlikely to ever have been palatalised.

A similar search of Ó Dónaill's *Foclóir Gaeilge-Béarla* using the Gléacht package, provides the following statistics for the occurrence of *a* in the same environments:

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[8]< *colg/calg*.

[9]I have not included *coirnín* 'curl' etc. < *corn* since such forms derive historically from *cuirn-* rather than *coirn-*.

[10]I have not included *goirín* 'pimple', *goirme* 'blueness' since they derive from *guirín* (< *gor*) and *guirme* respectively.

Environments	No of words with //a//	(Recent) loanwords	Total morphemes with //a//
# __ l'	48	37	c. 11
# __ r'	79	11	c. 68
# __ d'	15	10	1+
k __ l'	38	12	c. 26
k __ r'	50	9	c. 41
k __ d'	17	6	c. 11
g __ l'	12	5	7
g __ r'	50	10	c. 40
g __ d'	0	--	--

Table 3C.5

Although the frequency of //a// in the environments #, k, g __ l', r', d' is not particularly high, it follows from a comparison of table 3C.4 and 3C.5 that //a// occurs more frequently in these environments than //o//.[11]

Although the numbers arrived at for Modern Irish do not reflect exactly the situation in earlier stages of the language, they do, nevertheless, provide us with a good impression of the occurrence of original //o// *vis-à-vis* //a// in the micro-phonological environments #, k, g __ l', r', d'. In particular, these results suggest that //a// was raised in those environments for which the functional load of the opposition //a//~//o// was very low. If correct, this provides us with a new insight into vowel development in Gaelic. It suggests that the phonological vowel space in Gaelic may be partitioned into a number of mini-phonological spaces or trajectories, each being defined by consonantal environment. As with phonological spaces in general, individual phonemes may spread out and occupy unused parts of such mini-phonological spaces. In particular, original //a// may have spread out to occupy unused phonological space defined by the consonant environments #, k, g __ l', r', d'. This view of phonological space makes perfect sense when we consider the central role of consonantal environment, in particular the opposition between velarised and palatalised consonants, in the development of the Gaelic vowel system.

Our survey of the word classes {//a// / __ r' l', d'} and {//o// / __ r' l' d'} in Irish provides us with the following words where oppositions between both word classes may be sought in future research:

[11]Further research may show that //a// occurs more commonly than //o// in prepalatal environments generally.

//a//	//o//
{*aireachtas* 'assembly'}	{*oir* 'edge'}, {*oir-* 'fitting, suitable'}
{*cair* 'crime'}	{*coirb* 'yoke'}, {*coirce* 'oats'}, {*coire* 'pot'}, {*coireán* 'campion'},{*coirm* 'ale'}
{*caileach* 'cock'}	{*coilgn-* 'prickle'}
{*gail* 'boil'}, {*gaile* 'appetite'}	{*goil* 'crying'}
{*gair* 'shouting'}	{*goire* 'piety'}

__ F [+voice]

Fricatives in both Irish and ScG have tended to be lost word internally. The most significant difference between Irish and ScG dialects is that the loss of an intervocalic fricative usually results in the coalescence of the preceding and following syllables in Irish; the original syllabic structure is generally retained in ScG dialects. We have argued that the reduction of original disyllables to monosyllables may have further affected the vocalism of reflexes of //a// in some cases. For instance it is possible that /o:/ in Donegal dialects may have been the result of the reduction of the disyllabic [awə] sequence to a monosyllable, perhaps through an intermediate stage [owə].

//a// __ F[+voice][+labial]

Original //v// has been lost in all Irish and ScG dialects. Original //ṽ// has been retained in some Irish and Scottish Gaelic dialects, e.g. Connacht, Lewis, Harris, Sgalpaidh, Arran, Kintyre. Original //ṽ'// (and //v'//?) have been retained in Connacht and Ulster Irish dialects but not apparently in ScG dialects.[12]

There is some evidence from both Irish and ScG dialects that there may have been two developments of original //av// sequences. The first involved the raising of //a// to //o// before the vocalisation of //v//. The word class {//av// > /ov/} is similar in both languages and includes *gabhal, gabhar, sabhall, tabhair* (ScG), *gabhar, gabhal, tabhair* (Irish). It may be significant that all of these words, with the exception of *tabhair*, contained a round vowel in their second syllable. Older spellings of each are: *gabhal* < *gabul, gabhar* < *gabor, sabhall* < *sabull*, see DIL s.v. *gabul, gabor, saball*. We suggested that the round vowels of the second syllables may have had the

[12]It has already been pointed out that the available evidence is insufficient to illustrate the development of //av'// and //aṽ'// in ScG.

effect of rounding the stressed //a// to /o/ in these words, in which case the development may be an old one.

Otherwise when the labial fricatives //v ṽ// are lost, this has generally resulted in the development of *u*-gliding diphthongs in both Irish and ScG dialects (except in Donegal where /o:/ appears to be the more common development). This is always the case when the fricative occurred preconsonantally although diphthongisation does not always occur in ScG dialects when the fricative occurred intervocalically, e.g. Skye.

This may also have been the case in Irish dialects before the coalescence of syllables originally separated by the fricative. ScG, unlike Irish, does not appear to differentiate in the quality of the first element of diphthongs between reflexes of original //av// and //aṽ// when diphthongisation has developed i.e. particularly when the fricatives occurred preconsonantally, e.g. *abhras, samhradh*.

The available evidence from both Irish and ScG suggests that //v// was liable to be lost earlier than //ṽ//. We also noted the tendency for //a// not to be raised before original //ṽ//, i.e. in a nasalised context.

Diphthongisation has resulted where //v'// and //ṽ'// have been lost preconsonantally. There appears to be no distinction synchronically between the reflexes of original //av'// and //aṽ'// in either Irish or ScG dialects.[13] The Scottish development of //av'// and //aṽ'// in preconsonantal position at least, is generally /ai/ but in Irish /əi/ (Munster) dialects.

In the development of the lexeme *amhrán*, we noted a tendency in both languages for the nasality of the first syllable to be lost. We have argued that the loss of nasality in this word may have occurred quite early, certainly before the raising of //a// to //o// and before the vocalisation of //v//. We also suggested that contamination with *óráid/òraid* may have occurred in the development of this word. In particular, it explains the development //a// > /ɔ:/ in some ScG (DOH, S) and Donegal (DD) dialects.

[13]There may be a distinction in north Connacht and Donegal dialects between /ɛ/ < //av'// and /a/ < //aṽ'//, see table A1.A.1 (appendix 1).

//a// __ F[+voice][+dental]\[+velar]

The velar fricative occurs usually only in initial position in Irish; its distribution is wider in ScG dialects, where it can occur intervocalically or word finally. The development of //a// > /ɤ:/ / __ ð/ɣ is common in ScG and Donegal dialects. In other Irish dialects, where the development //a// > /əi/ is common, it is not clear if /əi/ represents a further development of /ɤ:/ or not. We have argued, however, that such *i*-gliding diphthongs originated in disyllabic sequences /Auɻə/, where a palatal glide [j] developed from the velar approximant [ɯ], perhaps partly in order to preserve the original disyllabic sequence. Our discussion of the evidence led us to reformulate the rules for the development of svarabhakti vowels in Irish dialects. We argued that the domain for the development of svarabhakti vowels was wider in Munster dialects than in other Irish dialects. In particular, we argued that svarabhakti vowels developed in //ð/ɣC// sequences with C = /v m l r/ only in Munster dialects. We noted that there was some evidence to suggest that svarabhakti developed also in the clusters //ðb//, //ðg// in Munster and Connacht dialects; for Donegal the evidence is ambiguous and it is impossible to predict from the synchronic evidence whether or not svarabhakti developed in the clusters //ðb//, //ðg// in Donegal. Similarly the ScG evidence is ambiguous. Just as in Donegal but unlike Munster and Connacht Irish dialects, there does not appear to be a difference in treatment of prevocalic and preconsonatal //að/ɣ// in ScG. Unfortunately there are no examples contained in the ScG monographs which would illustrate the development of //a// before any of the sequences //ðg// or //ðb//. We shall see in our discussion of //e//, however, that there is some evidence to suggest that svarabhakti did not in fact occur in these clusters. See for example *meadhg* /mjɤɣg/ (DOH: 241, no. 69) where there is no trace of a svarabhakti vowel.

The development in ScG and Donegal dialects to /ɤ/ suggests the raising and centralisation of //a// in the environment __ ɣ.[14] The loss of intervocalic /ɣ/ but the retention of the original syllabic structure may have led to the phonemicisation of /ɤ/ (and therefore /ɤ:/) in ScG (and Irish?), see Chapter 8. There is evidence of yet another development //a// > /a:/ in both Irish and ScG, although it is rather restricted in ScG. We have suggested that this development //a// > /a:/ may have been earlier than the developments //a// > /ɤ:/ (ScG, Donegal), /əi/ (other Irish dialects) and may have occurred before the development of svarabhakti in certain //ðC// groups (in Irish dialects at least). The development //aɣV// > /a:/ (Irish), /o:/ (EPG) may suggest that //a// was lengthened before original //ɣ// prior to the general reduction of original //ð//

[14]Cf. discussion of //a// > /ɤ/ above.

or at least before the development //ð// > /ɣ/. The evidence for the latter tentative observation is based more on Irish than Scottish evidence.

The development of //aɣ'// intervocalically is /ɛ/ and /a/ in ScG; preconsonantally the development is /əi/ and /aj/, /ai/. There appears to be a correlation between the development of /əi/ and /ɛ/, and of /aj/, /ai/ and /a/. Those dialects which develop /ɛ/ tend also to develop /əi/, e.g. GL, DOH, Skye. Similarly those which develop /a/ tend also to develop /aj/, /ai/.[15] This would seem to suggest the development:

//a// > /ɛ/
/ɛ/ > /əi/ / __ ɣ'C

OR

//a// > /ɤ/
/ɤ/ > /ɛ/ / __ ɣ'V
/ɤ/ > /əi/ / __ ɣ'C

In Irish the development of //aɣ'// is universally /əi/ (including Donegal dialects). The developments //a// / __ ð'/ɣ' > /ɛ/, /əi/ (ScG), /əi/ (Irish) may provide further evidence for the raising of //a// to /o/ or */o/ in the prepalatal position.

Possible evidence for a chain shift

We have argued that the development of //að/ɣ// and //að'/ɣ'// may have caused a chain shift in the Gaelic phonological system. In particular, the vocalisation of //ð/ɣ// may have led to the raising of CG //ə:// to /ɯ:/ in some Irish and ScG dialects, a fact which has so far remained unexplained. The realisation of //að/ɣC// and //ə:// and //að'ɣ'C'// and prepalatal //ə:// in Gaelic dialects may be summarised as follows:

	Munster	**Connacht**	**Ulster**	**SW Arg**	**Arg**	**other ScG**
//að/ɣC//	əi	əi, a:	ɤ:, e:	e:~ø:	ɤ:	ɤ:
//ə://	e:	i:	ɯ:, i:	e:~ø:	ɤ:	ɯ:
//að'/ɣ'C'//	əi	əi	əi	aj	əi?	əi
//ə:// / __ C'	i:	i:	i:, ɯ:	e:~ø:, ei	ɤ:?	ɯ:, ui

Table 3C.6

Given that //ə:// is likely to have been realised as a mid vowel and the fact that reflexes of //að/ɣC// and //ə://, and //að'/ɣ'C'// and prepalatal //ə:// are generally kept quite distinct throughout the Gaelic area (excluding Argyll), it seems likely that the

[15]But see Ross-shire /a/ and /əi/, table A1.B.1 (appendix 1).

development of each is somehow related. In most cases it has been reflexes of //əː// which have altered to avoid merger with reflexes of //að/ɣC//. However, in Munster dialects, the development of *i*-gliding diphthongs from //að/ɣ// sequences did not lead to a potential merger with //əː//. This may help explain why original //əː// has not been raised in Munster, the only area in Ireland where //əː// has not been raised. On the other hand, merger does occur in Argyllshire dialects.

//a// __ SON#\+C[+hom]

The lengthening of //a// to /aː/ before original //R// and //rC[+voice]// groups is characteristic of almost all Gaelic dialects and may be older than the diphthongisation which has developed before original //L N M//. Lengthening of //a// before R, rC[+voice] occurs also in conservative dialects in which //a// is not lengthened or diphthongised before //L N M//. Lengthening or diphthongisation do not normally occur before original //L N M// in SW Argyll or in Ulster and North Connacht. These conservative areas form a band which separates the two major areas in which lengthening/diphthongisation occurs. The geographical distribution for lengthening/diphthongisation implies that the development has been an independent development in both Irish and ScG. Diphthongisation of //a// before the other sonorants //L N M (+/– palatalisation)// in both Irish and ScG normally yields *u*-gliding diphthongs before the 'broad' sonorants, *i*-gliding diphthongs before the 'slender' sonorants: //a// → /au/ / __ L N M, //a// → /ai/ / __ L' N' M'. Lengthening of //a// before //rC[–voice]// occurs more commonly in southern Irish dialects and appears to be lexically conditioned.

Chapter 4

Section A
Development of //e// in Irish

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //e// has been retained in Irish dialects only before palatals other than fricatives and long sonorants. Munster dialects with forward stress reduce original //e// to /i/ and /ə/ in pretonic position. In Connacht dialects original //e// has been raised to /i/ and /u/ when the second syllable contains the long vowel /a:/, or very rarely /o:/. Connacht dialects, unlike Munster dialects, retain the initial stress in such words. It is unclear whether Connacht /i/, /u/ represents a later restressing of pretonic /i/, /ə/ in such instances. There is clearly an implicational relationship between the variables V: = /a: o:/ for the raising of //e// which may be expressed as /o:/ ⇒ /a:/. In other words if raising to /u/ occurs in a particular dialect when the second syllable contains /o:/, then it will also occur when the second syllable contains /a:/. This implicational relationship for Connacht dialects may be expressed in the following scalogram:

	Raising of //e// to /u/, /i/ before:	
Dialect	a:	o:
IE, IT	+	-
ICF	+	+

Table 4A.1

The distribution between /i/ and /u/ in Connacht dialects in words whose second syllable contains /a:/ (rarely /o:/) is illustrated in table 4A.2:

	ICF	**IT**	**IE**
leadán	i	--	--
feadán	--	--	i
measgán	i	i	i
treasnán	i	--	--
spreasán	--	i	i
neasgóid	i	--	i
bearrán	i	--	--
meannán	i	i	i
seangán	ug	i	u
sreangán	ug	i	u
creagán	--	u	--
preabán	u	--	--
gearrán	u	--	i

	ICF	IT	IE
pearóid	u	--	--
dealán	--	--	u

Table 4A.2

It follows that raising and fronting to /i/ is most common before the segments /d s r/ and the nasals /N ŋ/. Raising and retraction to /u/ is common before the segments /g b/ and also the nasal //ŋ// (> /g/ in some dialects). It is also attested before /r/ and /l/. It is significant that fronting to /i/ occurs most commonly before the segments /d s r/, precisely the segments which are usually non-velarised in Connacht dialects, see chapter 1. Similarly, retraction to /u/ occurs most commonly before the velar segments /g ŋ/, velarised /l/ (one instance), and /b/. The contrast between /i/ *bearrán* ~ /u/ *gearrán*, *pearóid* might suggest that the preceding consonantal segment affected the development in some instances. It is difficult to reconcile the developments //e// > /i/ / b' __ ra: and //e// > /u/ p' __ro:. It is perhaps significant that raising (to both /i/ and /u/) occurs in nasal enviornments, e.g. *meascán, neasgóid, meannán, seangán, sreangán*, see further below.

//e// > /a/

Leaving aside instances of //e// > /i/, /u/ just discussed, original //e// has been universally lowered in Irish dialects before non-palatals except in some cases before velars and in a small number of other cases. For instance original //e// is never realised as /a/ in Irish dialects in the lexeme *beag*. Ó Dochartaigh (1987: 76) points out that the lowering of //e// to /a/ has not been universal before velar segments:

> The . . . development of the original /e/ before a voiced velar stop /g/ is different from its treatment in other environments. In most areas it appears as some variety of the /o/ phoneme, though it can be represented by /u/, /e/ or /a/, with the differing possibilities apparently depending on the particular dialect and lexeme involved.

Ó Dochartaigh's statement refers only to the voiced velar stop[1] although the available synchronic evidence clearly suggests that the statement holds to varying degrees, depending on the dialect and lexeme involved, to all velar segments as the following table illustrates:

[1]The development //e// > /o/ is particularly common in Donegal dialects, see appendix 2.

//e// > /o/ Irish

	IWM	IR	ICF	IT	IE	DD	TY
beag	o, e	e	o	e	e, o	i	o
eagla	a	a	[a:]	a	[a]	i	o
leag	a	a	a	a	a	i	o
teaghlach	--	--	--	--	--	i	əɯ
deacair	o	o	o, a	o	o	--	a
seachrán	a	a	--	o	o	a	a
seachas	o	--	--	--	--	a[2]	--

Table 4A.3

The development //e// > /o/ in IT, IE *seachrán* may be related to the development //e// > /u/ in words whose second syllables contain /a:/, cf. IT *brachán* /o/. Variation between *ea* and *eo* is found in Classical Irish before the velar /x/ both for historical //e// and the diphthong //eo//, e.g. *seacham~seocham* < //e//, *eochair ~ eachair* < //eo//, see McManus (1994: 348). Such variants would seem to suggest that variation between /e/ and /o/ may have occurred before the segment /x/ as a result of the smoothing of original //eo// to either /e/ or /o/. It is not clear what effect the morpho-phonological pattern //e// (N) ~ //eo// (D) may have had on phonological variation between /e/ and /o/ with the reduction of //eo// to /e/ or /o/, e.g. *neach* (N) *~neoch* (D), *each* (N) *~eoch* (D) (McManus 1994: 348). In any case, the development //e// > /o/ may not be a straight forward case of retraction and rounding to /o/.

Ó Baoill (1978: 303-305) and Ó Dochartaigh (1987: 75-82) note that in East Ulster dialects and some northern Donegal dialects (including TY, on which see below) original //e// is realised as /e/ preceding the segments /g d s/. We may add that //e// is frequently realised as /e/ also before the segment /h/ < //θ//, especially in northern Donegal dialects (e.g. TY). It is not clear if /e/ realisations of original //e// in such instances (a) reflect the original state of affairs, in which case it could be said that //e// was not lowered before the segments /g d s (h)/ or (b) represent a later raising of /a/ which had earlier been lowered from original //e//.[3] Ó Dochartaigh (1987: 77) opts for (a) although he argues that in some instances the raising is secondary, i.e.

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[2]*fa seach*.

[3]This would have to be investigated individually for each dialect in which the development //e// > /e/ / __ g d s (h) is attested. There is some evidence that original //a// has, in a relatively small number of words, been raised to /e/ before the segments /s d h/ in TY, e.g. *asg* /e/, *fada* /a/~/e/, *gad* /a/~/e/, *gadaidhe* /a/~/e/, *cathaidh* /e/, *cathair* /e/, *an t-athair* /e/. Cf. also *Cásga* /e:/. If, as these words show, there has been a tendency in TY to raise //a// before /s d h/ following non-palatals, then we might expect the development /a/ > /e/ to occur more commonly following palatals. This evidence implies that instances of //e// > /e/ / C' __ s d h in TY may reflect a raising of /a/ < //e// rather than a retention of original //e// in these environments.

//e// > /a/ > /e/:[4]

> One may presume that the historical change of /e/ to /a/ has come about through the increasing prominence of what must have been an *a*-like on-glide to the following neutral consonant. We might reasonably expect this glide to be most prominent in those circumstances where a sonorant consonant follows, that is consonants such as /l n r/ where the secondary articulation is of considerable auditory prominence and hence more capable of influencing the preceding vocalic element. This means that in the case of /d/ and /s/, these segments, with their fairly neutral secondary articulation, have *preserved* the low-mid front articulation of the vowel where it has been modified in the more sonorant environments.

Ó Dochartaigh explains the non-lowering of //e// to /a/ before /d s/ as being due to the 'fairly neutral secondary articulation' of these segments which was unfavourable to the development of *a*-glides. It is true that the segments /d s/ are not generally velarised outside of Munster dialects although it has yet to be proven that velarised segments are more sonorous than non-velarised segments. We may also note that the segment /h/ is neither marked for velarity nor palatality, which may account for the non-lowering of //e// before /h/ in some instances. Ó Dochartaigh points out that lowering occurs before /t/ which is also non-velarised in northern Irish dialects. If the reason for non-lowering before /d/ is its 'fairly neutral secondary articulation', then we might expect //e// not to have been lowered before /t/ which as far as we know has the same secondary articulation as /d/. Similarly, //e// is lowered to /a/ before /r/ which is also a non-velarised segment in northern Irish dialects, where we might not expect lowering if the absence of velarisation of following consonants really is a factor in the lowering and non-lowering of //e//. There is, however, evidence for rhotic lowering in Irish.[5] Leaving aside the apparent anomolous development before the segments /t r/ (or is it non-lowering before /d s/ which is anomolous?), the non-lowering before the non-velarised segments /d s/ would seem to suggest that the most favourable environments for the lowering of //e// before non-palatalised segments may have been __ C[+velarised]. We will return to this in our discussion of ScG.

Ó Dochartaigh (1987: 77) concludes that he can 'offer no convincing phonetic explanation' for the development //e// > /e/ before /d/ but //e// > /a/ before /t/ 'where we might have expected a similar behaviour' in both environments. If Ó Dochartaigh's sonorant argument is correct, then it might suggest that //t// was more velarised than its voiced counterpart, though this seems unlikely.[6] Another partial explanation of this

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[4]Ó Dochartaigh (1987: 63-75) discusses the raising of original //a// in /e/ in Donegal dialects and draws the isoglosses for the developments //a// > /a/ and //a// > /e/.

[5]Cf. *tirim, iris* /e/ ICF: 89.

[6]Indeed from a pan-Goedelic perspective, it could be argued that the opposite was the case, i.e. that //d// was more velarised than //t//. The fact that the voiced dental fricative //ð// yields /ɣ/ but //θ//

apparent anomalous development before the dental stops may perhaps lie in the incidence of //et// and //ed// sequences in Gaelic. Further research may show that the sequence //et// occurred more commonly before velarised consonants than //ed//, thus allowing the spread of /a/ at the expense of //e// before velarised allophones of non-velarised //t//. Alternatively, the lowering of //e// before /t k/ but not /d g/ and /s h/ may imply that vowels were somehow more sonorous when they occurred before the voiceless stops /t k/.

It is unclear if //e// was lowered to /a/ preceding fricatives before the vocalisation of fricatives. See discussion below.

We have already noted that //e// has not been lowered in all cases before the segments /d s/ and /h/ < //θ// in the dialect of TY. Compare the developments //e// > /a/, /e/ before these segments in the following table:[7]

Environment	**/a/**	**/e/**
__ d	ceadmhach	cead, nead
	fead	feadán (/e/~/a/), feadalaigh
__ s	easbhaidh, easna	easair, eascairdeach
	deasach	deas (/a/~/e/~/i/)
__ h < //θ//	ceathramh	beatha, beathadhach, ceathrar (/a/~/e/), leath (/a/~/e/), leathan, leathar

Table 4A.4: Distribution of /e/ / C' __ C in TY

This table, though limited in scope, shows a marginal preference for /e/ in monosyllables and also in words where the segments //d s θ// occur intervocalically rather than preconsonantally. *Deasach* /a/ is the only exception to the latter tendency. This would seem to imply that the lowering of //e// to /a/ before //d s θ// may have originated in words of the shape //C_0ed/s/θC//- especially where C was C[+velarised]. There is also some evidence which suggests that //e// may have been retained before /Ci(:)/ sequences, where C = /h/ < //θ//, /r/.[8] Consider the realisation of *beathadhach* in Irish dialects in table 4A.5 below. Note /e/ occurs in most Irish dialects in the singular and plural forms of *beathadhach* but in some Donegal dialects (e.g. TY) /e/ forms seem to occur only in the plural forms *beathadhaigh* ending in /i(:)/ (/a/ occurs

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yields /h/ not /x/ could be taken as evidence that //ð// was more velarised than //θ//. This in turn might lead one to speculate that //d// was more velarised than //t//.

[7]//e// > /e/ also in *ceardaidhe* but c.f. *ceardcha* /a:/, TY: 251.

[8]There is some evidence to suggest, however, that in TY at least, //a// was raised to /e/ in words whose second syllables contained /i(:)/, e.g. *cathaidh* /kehi/ (TY: 250) but cf. *cearthaidh* /k'arhi/ (TY: 251).

in the nominative). Compare the retention of /e/ in *ceardaidhe* with final /i/ in TY: 251. Similarly, we note that DD has /a/ in the singular form of *bearach* but /e/ in the plural form *bearaigh*, ending in /i(:)/. This preference for higher vowels before /h/ when followed by /i(:)/ can also be seen in the singular nominative and genitive forms of *leathach* in DD. In the singular we have [L'ɛhəx] but in the plural we have *leathaigh* [L'ehi:], DD: 34. The retention of /e/ forms in *leathach* (DD) may be due to genitive singular and nominative plural forms *leathaigh* where there appears to have been a tendency, in Donegal dialects at least to retain original //e// in words where original //θ// (and perhaps /r/ and other consonants also) was followed by /i(:)/. The retention of //e// in syllables of the shape /ehi(:)/ is surely significant and points to a type of height harmonisation between stressed and unstressed vowels in some Donegal dialects, in syllables containing intervocalic /h/ (and /r/). This height harmonisation may explain the retention of //e// in reflexes of *beathadhach* in Donegal dialects whose unstressed syllable is invariably /i(:)/. Unstressed *-adha-* has commonly resulted in /i:/ in Irish dialects. The reduction of unstressed //ð// in this word would have resulted in */b'ehi:x/. Given the neutrality of the segment /h/ to palatal and velar quality generally in Irish, the intervocalic /h/ would in some dialects have assimilated to the palatal or front quality of the following vowel /i:/. This in turn would have had the effect of raising slightly the quality of the preceding vowel /e/, thus merging with syllables of original shape //eθ'ə//. This 'palatal' quality of the syllable /eh/ preceding /i(:)/ may have blocked the development //e// > /a/ in such words. This explanation, as well as explaining the retention of /e/ in reflexes of the word *beathadhach*, also provides the following relative chronology of sound changes for dialects containing /e/ in *beathadhach*. It implies that the dental fricative //θ// must have been reduced to /h/ before the lowering of //e// to /a/ had spread to words containing intervocalic //θ//. This does not necessarily imply that //e// had not begun to be lowered in other environments before the reduction of the dental fricative //θ// to /h/ had occurred.

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
beathadhach	**e**	--	**ei**	**eh**	**e**	a:[9]	a:~e:(sg)[10]~ **e** (pl)
bearach	--	--	--	--	**e**	a (sg)~ **e** (pl)[11]	a
leathach	--	--	--	--	a	**e**	--

Table 4A.5

The retention of //e// in some cases may be due to analogy with other words containing /e/. It is conceivable that *leathach* 'sea-weed which is used for manure'

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[9]/b'ahi/ (pl).
[10]/b'ehi/ (pl).
[11]Plural form: /b'eri:/ *bearaigh*.

(DD: 34) may have been affected by the morpheme {*leithead* 'breadth'} which has /e/ < //eθ'//. Ó Baoill (1978: 305) suggests in the case of *bearach* that the retention of //e// 'may have been affected by that of *biorach*, "sharp", which is attested with an *e*-sound in Tourmakeady . . . as is *bior* in parts of C. Galway'. However, the stressed vowel /e/ of *biorach* 'sharp' in such instances, which is historically //e// (See DIL s.v. *berach*), itself needs to be explained. If it represents a retention of original //e//, it is possible that a mid-high vowel /e/ has been retained in this word through analogy with the high vowel in *bior* /i/, which derives from original //i//. However, there is much evidence for the lowering of //i// before /r/ in Connacht dialects, see chapter 7, section A.

In our discussion of the development //e// > /e/ in ScG, we suggest a different explanation for the divergent developments before the segments /d s h/ and /t/, see section D.

A significant minor development in Irish dialects has been the retention of /e/ in future (including conditional) forms of the substantive verb, *tá*. Consider the following table:

//e// > /e/ / C' __ C Irish

	IWM	IR	ICF[12]	IT	IE	DD	TY
bead	e	e	ei, e	--	--	--	--
bheadh	e	e	e	e	--	--	e
bheas	--	--	e, ei	e:	e:	--	--

Table 4A.6

The retention of the mid vowel /e/ suggests that future and conditional forms of the verb *bí* contain the underlying future morpheme stem {b'e} to which the future and conditional morphemes are added, thus yielding bimorphemic forms with /e/.

We may also note the minor developments of //e// > /a:/ before groups containing /d g/ and one of the sonorants /l r/, e.g. *eagla, eaglai, eadra, eadrainn*[13] in southern Connacht dialects. The development to /a:/ presupposes that //e// was lowered to /a/ preceding /d g/ before lengthening occurred in these words, as in *ceann* /a:/ etc.

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[12]See also GCF.

[13]The latter two examples noted by the author.

//e// > /i/

Raising of //e// to /i/ is common in all Irish dialects. It occurs most commonly between palatals, particularly when one of the surrounding consonants is [+nasal]. Raising in [–nasal] environments depends to a large extent on the dialect and lexeme involved. Raising of //e// to /i/ occurs marginally in some Connacht dialects following palatalised nasal consonants and preceding non-palatal consonats, e.g. *measardha(cht)*, *neasacht*, see table 4A.7 below. The raising of //e// to /i/ in the interpalatal environment is illustrated in tables 4A.7-8 below:

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
meinic	**i**	**i**	**i**	**i**	**i**	**i**	**i**
meise	**i**	**i**	**i**	**i**	**i**	**i**	--
meisneach	**i**	**i**	--	**i**	**i**	--	**i**
meisge	e	e	**i**	**i**	**i**	**i**	**i**
meiste	**i**	**i**	**i**	--	--	**i**	**i**
meil(t)	e	e	--	**i**	**i**	e	--
meirg	e	e	e	--	e	**i**	**i**
smeig	e	--	--	**i**	**i**	**i**	**i**
meitheamh	**i**	--	--	--	--	--	--
neimh	**i**	**i**	**i**	**i**	**i**	**ĩ**	**i**
Neidín	e	--	--	--	--	--	--
neid(e)	**i**	--	e	--	--	--	--
deimhin	**əi**	**əi**	**iv'**	**iv'**	**ĩv'**	--	**iv'**
geimhreadh	**i:**	ai	**i:v'**	**iv'**	**ĩv'**	ev	ev'
deimheas	--	--	**iv'** (GCF)	--	**ĩv'**	**ẽv'**	**iv'**
teine	**i**	**i**	**i**	--	**i**	**i**	**i**
seinm	**əi**[14]	**i**[15]	--	**i**	**i**	**i**	**e**
teinneas	e	**i**	**i**	**i**	**i**	**i**	**i**
deithneas	**i**	**i**	--	--	--	--	--
deichneabhar	e	e	**i**	**i**	**i**	**i**	**e**
greim	**əi**	**əi**	**i:**	**i**	**i**	**i**	**i**
measardha(cht)	--	--	--	**i**[16]	a	a	a
neasacht[17]	--	--	--	--	**i**	a[18]	--

Table 4A.7a: //e// > /i/ / C' __ C', C'_x = [+nasal]

[14]*seinnt*.
[15]*seinniúint*.
[16]*measardhacht*
[17]We may compare the raising of //e// to /i/ in *neascóid* in the Irish of Erris. It is not clear whether the raising is due to the initial nasal or to the long vowel /o:/ in the second syllable.
[18]*neas* 'near'.

	IWM	IR	ICF	IT	IE	DD	TY
meirbh	--	--	e	e	e	--	--
meithea!	--	--	e:, ai	a	e	e	e
meigeal(ach)	e	--	e	--	--	--	--

Table 4A.7b: //e// > /e/ / C' __ C', C'_x = [+nasal]

	IWM	IR	ICF	IT	IE	DD	TY
*leig(ean)	o[19]	i	i	i	i	i	i
teilg(ean)[20]	--	--	i	i	i	i	--
leic	i	a (leac)	e	a (leac)	e[21]	e[22]	--
seisean	e, i	e	--	e	e	--	--
feitheamh	i	--	--	--	e	--	e, i[23]
leithscéal	--	--	i	e	e	e, i	i
eiteán	--	--	i	--	i	--	e
deirg	--	--	--	--	i	--	e
feirge	--	--	--	--	--	i	e
seirbhe	--	--	--	--	--	i	--
deil	--	--	--	--	--	i	i
deise	--	--	--	--	--	e, i	i[24]
creidte	--	--	e	--	--	e, i	e

Table 4A.8: //e// > /i/ / C' __ C', C'_x = [–nasal]

Table 4A.9 and chart 4A.1 provide an analysis of the frequency of the development //e// > /i/ in a nasal interpalatal environment.

	IWM	IR	ICF	IT	IE	DD	TY
Total returns	21	16	14	13	16	15	15
//e// > /i/	10	9	11	13	14	12	12
%	48	56	79	100	88	80	80

Table 4A.9

[19] *leogaint*.
[20] *teilgean* > *tligean* in ICF, IT, IE, DD.
[21] dative, genitive.
[22] genitive.
[23] /e/ *feitheamh*; /i/ *feithint*.
[24] 'repair'.

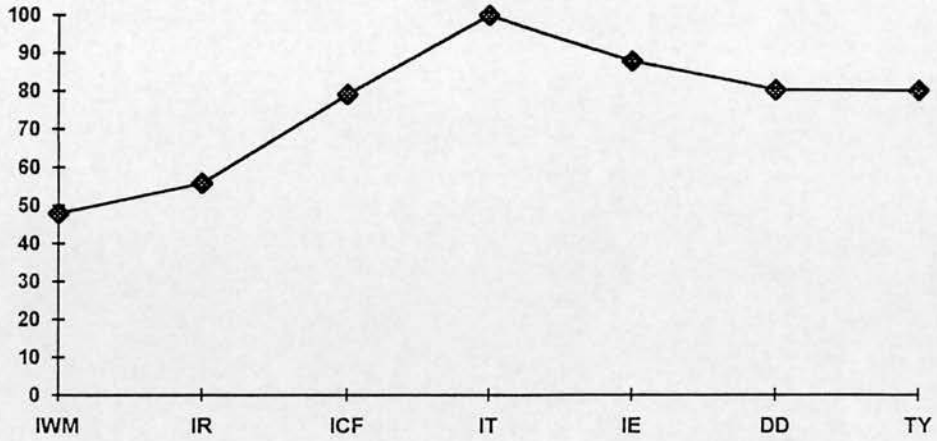

Chart 4A.1

It is clear according to our data that raising of //e// to /i/ in a nasal interpalatal environment is more common in Connacht and Donegal than in other Irish dialects. The following scales of frequency for the development also emerge:

Munster << S. Connacht << Donegal << Connacht
IWM << IR << ICF << DD = TY << IE << IT

From tables 4A.7-8 it follows that the development //e// > /i/ occurs in three different macro-environments:

(1) C' __ C'[+nasal]
(2) C'[+nasal] __ C'
(3) C' __ C', both C' ≠ C'[+nasal]

For these environments, the following figures describe the number and percentage of the occurrences of //e// > /i/ in each:

Word classes {//e// > /i/}	**Total returns**	**No. of //e// > /i/**	**%**
(1) C' __ C'[+nasal]	51	36	71
(2) C'[+nasal] __ C'	67	45	67
(3) C' __ C', both C' ≠ C'[+nasal]	44	28	64

Table 4A.10

This implies that the development occurs roughly with the same frequency in each word class with a marginal preference for the development in the class {//e// > /i/ / __ C'[+nasal]}. The raising of //e// > /i/ in word classes (1) and (2) is clearly lexically conditioned, see table 4A.7b, and compare /e/ *meisge* (IWM, IR) with

/i/ (Connacht, Donegal); for instances of //e// > /e/ before C', see appendix 2. However, raising in class (1) is categorical before //n' N'//, i.e. __ C[+nasal][–F].[25]

If we consider lexemes in tables 4A.7-8 with 57% or above, as core members of the class {//e// > /i/}, we see that the development //e// > /i/ has occurred with most frequency in the lexemes:

Lexemes in which the development //e// > /i/ is most common in Irish dialects
meinic, meise, meisneach, meisge, meiste;
smeig;
neimh;
deimhin, geimhreadh, deimheas;
teine, seinm, teinneas, deichneabhar;
greim;
leig(ean), teilg(ean), leithscéal

Table 4A.11

Raising of //e// to /i/ is particularly common following the palatalised labial nasal /m'/ and preceding the segment /ʃ/, and as we might expect from the discussion above before all palatalised nasal segments (for raising before //N'//, see below). The examples from table 4A.11 also suggest that //e// flanked by nasal segments or by nasal and voiceless segments, i.e. C'[+nasal] __ C'[+nasal] or C'[+nasal] __ C'[–voice] and C'[–voice] __ C'[+nasal] are the optimal environments for the raising of //e// to /i/.

Raising of //e// to /i/ also occurs in a small set of words involving non-nasal environments. It is interesting to note that the word class involved is independent in each dialect with no apparent common class membership shared among the dialects. An interesting pattern emerges in Donegal dialects where the change //e// > /i/ / C' __ C' appears to be common before palatal epenthetic *r*-groups in inflected forms such as *deirg, feirg, seirbhe*.

//e// > /a/ / C' __ C'

There are sporadic instances of //e// > /a/ in palatal environments. Out of a total of three examples, two contain /r/ which derives from original //R'//, and /r/ in //rC'// clusters. The following examples illustrate the development:

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[25]Raising of //e// to /i/ is lexically and dialectally conditioned before the nasalised labial fricative //ṽ'//. Compare /i/ *neimh* (all Irish dialects), *deimhis* /ɛ̃/ (DD), /i/ (GCF).

	IWM	IR	ICF	IT	IE	DD	TY
ceirtlín	a	--	e	--	e	a, e[26]	--
meitheal	--	--	e:, ai	a	e	e	e
reithe	--	--	e:[27]	--	e, o	--	o[28]

Table 4A.12: //e// > /a/ / C' __ C' Irish

(ii) __ F[+voice] [+labial]

The major developments of //e// before __ F[+voice] [+labial] are summarised in the following table (see map 9 (*leabhar*)):

	IWM	IR	ICF	IT	IE	DD	TY
ebh	au	əu	auV,C; o#	əu	əu	o:V, auV,C	o:, auC
emh	au	au	au, ăw#	av	ăv	ău	ău̯
eibh	əi	əi	--	--	ev'	ev'#	iv'
eimh	i:	ai	iv'V, i:v'C'	iv'	iv'	ev', ĕv'	iv'

Table 4A.13

(A) __ v ṽ

The labial fricative //v// has been vocalised in all Irish dialects following original //e//. Following //e//, the palatalised labial fricatives //v' ṽ'// have been retained mostly in Connacht and Donegal dialects. The labial fricative //ṽ// has been retained following //e// in most Connacht dialects. The development of //ev// and //eṽ// has been identical in some Munster and southern Connacht dialects but both have in most Irish dialects developed along different lines. The 'minor' development of /ou/ < //ev// in some words (e.g. *leabhar, deabhaidh*) in IWM suggests that the dialect of IWM may well formerly have had a similar distinction between *u*-gliding diphthongs as reflexes of //ev// and //eṽ// respectively. The loss of the contrast between original //ev// and //eṽ// in IWM and ICF may be a fairly recent development.[29] The development of //ev// has yielded /əu/ in Ring and most Connacht dialects whereas //eṽ// has yielded /au/ in Ring and usually /ău̯/ in Connacht dialects.[30] In Donegal //ev// has yielded /o:/ and *u*-gliding diphthongs.

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[26]/a/ 'ball of string, wool'; /e/ 'a lifeless or awkward mass' DD: § 227, p. 84.
[27]GCF.
[28]Analysing [əi] before /x'/ as /o/.
[29]See IWM: 30 where Ó Cuív discusses the merger between /au/ and /ou/ 'among the younger speakers'.
[30]Note /au/ (and /ău̯/#) ICF.

The difference in development of //ev// and //eṽ// is no doubt due to the fact that //v// was vocalised prior to //ṽ//. Reflexes of //eṽ// (i.e. /au/, /ãũ/, /ãv/) suggest that //e// was lowered to /a/ before //ṽ// in all dialects, including those in which it was subsequently vocalised. We cannot be certain whether or not //e// was lowered to /a/ before //v// prior to its vocalisation. In favour of the lowering, we might cite the parallel developments of //av// and //ev// sequences. However, the parallel outcomes may be explained as mergers following the vocalisation of //v//. In dialects where reflexes of //ev// and //eṽ// are different, we note that the reflex of //ev// sequences is invariably a *u*-gliding diphthong with raised onset, which we may symbolise as /əu/.˙ This suggests that vocalisation of //v// led to the centralisation or raising of //a// in //ev// sequenes, see chapter 3. This is further implied by the fact that //ev// did not yield /au/ diphthongs in Munster dialects, where //ev// and //eṽ// are distinguished, since if it had, we might expect /au/ diphthongal reflexes of //aL// to have been raised to /əu/ along with /au/ from //av//. The raising of //a// in //av// sequences may have resulted in the merger of the word classes {//av//} and {//ov//}. If we assume that //e// was lowered to /a/ before //v// prior to the vocalisation of //v//, then we can account for the parallel development of //av// and //ev// sequences. If, however, //e// was not lowered to /a/ before //v// prior to its vocalisation, the *u*-gliding diphthongs arising from //ev// sequences would have been in complementary distribution with the *u*-gliding diphthongs deriving from both //av// and //ov// sequences:

//av//, //ov//	→	[Aw], [Ow] / C __
//ev//	→	[Ew] / C' __

The allophonic status of *u*-gliding reflexes of //ev// *vis-à-vis* those of //av// and //ov// would account for the parallel development of these sequences.

Donegal dialects differ substantially from other Irish dialects in that the vocalisation of //v// in the sequence //ev// results in both lengthening (/o:/) and diphthongisation (/au/), as the following table illustrates:

	DD	TY
feabhas	o: (MON)	o: (MON)
seabhac	o: (MON)	o: (MON)
leabhar	o: (MON)	o: (MON)
treabh	o: (MON)	o: (MON)
meabhair	o: (MON)	o: (MON)
streabhóg	[auwɔg]	--
deabhaidh	[auwi:]	--
Eabhra(i)s	au	au
Feabhra	au	--
dreabhlas	au	au

Table 4A.14

A clear pattern emerges. Prevocalic //ev// is monophthongised to /o:/ when //evV// is reduced to a monosyllable, e.g. *feabhas* etc. Otherwise prevocalic //ev// is diphthongised to /au/ when //avV// is retained as a disyllable, e.g. *deabhaidh*. This correlation between monopthongal reflexes of //evV// and monosyllables, and diphthongal reflexes and disyllables has also been noted in the case of the development of //avV//, see chapter 3. Preconsonantal //ev// is diphthongised /au/. Where //ev// has yielded /o:/ preconsonantally it can always be traced back to an underlying //evV// form, e.g. *meabhraigh* /o:/, based on *meabhair* /o:/, TY: 300. This distribution between /o:/ and /au/ provides a neat explanation of the development //ev// in Donegal dialects. It implies that diphthongisation was the most likely original development of all //ev// sequences in Donegal. Moreover, it implies that the resulting diphthong was only monophthongised to /o:/ when disyllables containing prevocalic //av// were reduced to monophthongs. The development of //av// in Donegal may be described as follows:

(1) //ev// → /au/
(2) /au-ə/ DIS → /o:/ MON[31]

We note from the examples contained in table 4A.14 above that not all /auV/ sequences have been monophthongised in Donegal dialects e.g. *streabhóg, deabhaidh*. Comparing these instances with *feabhas, seabhac, leabhar* etc. where monophthongisation to /o:/ has occurred, it would appear that when /au/ was followed by a vowel other than /ə/ that the reduction to a monosyllable and therefore monophthongisation to /o:/ did not take place. Note /au/ is followed by /i:/ in *deabhaidh*, by /ɔ(:)/ in *streabhóg*. It follows that /au/ followed by /ə/ is the most

[31]Quiggin sets out the development for Donegal dialects as follows: [aw] > [au(w)] > [ou] > [o:] which is similar to that suggested here although we have defined precisely the environment in which this development has taken place.

conducive environment for the monophthongisation of /o:/ which is always accompanied by the reduction of disyllables to monosyllables. This corresponds well with the conclusions reached in chapter 3.

The development of //ev// in Donegal dialects provides us with a valuable insight into the historical development of sound changes in Gaelic. It illustrates that a sound change (in this case /Eu/ > /o:/) occurred initially under strictly defined phonological conditions and then proceeded to spread through the lexicon by analogy, e.g. *meabhraigh* */au/ → /o:/ by analogy with *meabhair* /o:/ (< /au-ə/).

Alternatively, the development //ev// > /o:/ in Donegal may be explained as positing two different developments for //ev// in Donegal dialects, one considerably earlier than the other. In those words which illustrate the development //ev// > /o:/, it is possible that original //e// may have been raised to (either through the stage //e// > /a/ or directly to) /o/ before the vocalisation of //v// occurred. The subsequent vocalisation of //v// gave rise to /o:/ in such words, the expected development of //ov// in Donegal. This may have been particularly common in syllables of the shape //avV//, where V = [+round], see below. We note that the words *feabhas, seabhac, leabhar* which are illustrative of the development //ev// > /o:/ are attested in earlier stages of the language, with rounded unstressed vowels (in orthography at least). See DIL s.v. *febas*,[32] *lebor, sebac, seboc*.[33] If this is accepted it implies an early development of //ev// (? > /av/) > /ov/ before the vocalisation of //v//, and a later one //ev// > /au/ which occurred with the vocalisation of //v//.

We have already noted above that there is little if any evidence for the development *eabh* > *eobh* in earlier stages of the language, unlike the change *abh* > *obh*. This fact alone would seem to argue against an early merger of //e// and //o// before the vocalisation of //v//. Similarly, it may be relevant that there does not appear to be evidence of the development //ev// > /o:/ in Irish dialects outside of Donegal, as there was for the development //av// > /o:/ (e.g. *tabhairt* /o:/). This may also imply that the development //ev// > /ov/ > /o:/ did not occur in Irish dialects.

A rough idea of the occurrence of *abh, eabh, obh* in Irish can be gained from FGB using the Gléacht package as follows:

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[32]*febas* is attested as a *u*-stem. Cf. *febus* DIL s.v. *febas*.
[33]According to DIL, a borrowing from Old English *heafoc*.

abh	eabh	obh
abh* = 22	eabh* = 8	obh* = 0
?abh* = 163	?eabh* = 77	?obh* = 57
??abh* = 166	??eabh* = 41	??obh* = 107
???abh* = 5	???eabh* = 4	???obh* = 35
356	130	199
minus *iabh = 36	minus *abh = 29	minus *aobh* = 60
320	**101**	**139**

Table 4A.15

If we subtract occurrences of **iabh**, **abh#* and **aobh**, we get a more accurate idea of the frequency of *abh, eabh*, and *obh* in Irish: *abh* = 320, *eabh* = 101, *obh* = 139. We conclude that *abh* sequences in Irish are far more common than *obh* and *eabh* sequences combined. It follows that *u*-gliding diphthongal reflexes of *abh* were merged with *u*-gliding reflexes of *obh, eabh* in favour of a more marked? (or at least less frequently occurring) *u*-gliding diphthong whose first element was a mid vowel.

(B) Before //v' ṽ'//:

It is difficult to trace the development of //e// before //v'// for lack of examples. A search of FGB using the Gléacht package reveals four instances of words containing the sequence //ev'// in stressed position. The only examples occurring in the monographs consulted are *gheibh, Eibhilín* and *treibh*.

The available evidence would, however, suggest that //ev'// and //eṽ'// developed differently except perhaps in Donegal where the development is similar for both. In Munster dialects //ev'// yields /əi/, in Connacht and Donegal dialects /ev'/. //eṽ'// on the other hand yields /i:/ and /ai/ in Munster dialects but /i/ (/i:/) in Connacht dialects and apparently both /e/ and /i/ in Donegal dialects. The development of //eṽ'// in all Irish dialects except Donegal would suggest that //e// was raised to /i/ including Munster dialects where the raising preceded the vocalisation of //ṽ'//. The raising before //ṽ'// accords with the evidence discussed above with regard to the raising of //e// in nasal environments.

Minor developments:

Some Munster dialects show the minor development //ev// > /ou/ (IWM) which reflects the development of //ov// in these dialects. This may imply that //e// was not lowered in such words but retained as a mid vowel, which resulted in /ou/ following the vocalisation of //v//. However, instances of /ou/ for //ev// in IWM may in fact represent the original development of //ev//, realisations of /au/ for //ev// representing

a later lowering of /ou/ which occurred as a result of the merging of /au/ and /ou/, see IWM: 30.[34]

There is some evidence from Irish dialects that the nasality of syllables containing original //eṽ// and //eṽ'// in words of the shape C_0eṽ(')əC[+nasal] was lost before the vocalisation of //ṽ, ṽ'// occurred. This loss of nasality can be seen as a process of dissimilation between the two nasal segments //ṽ(')// and the following C[+nasal] or alternatively as a reassignment of nasality in words of this shape to the unstressed syllable. In Munster dialects *deimhin* is realised as /əi/ (IWM, IR) where the expected development of original //eṽ'// in these dialects is /i:/, /ai/ respectively. In fact the realisation of *deimhin* corresponds to //ev'// as witnessed in *Eibhilín* etc. This would seem to suggest a development *deimhin* > **deibhin* in these dialects. In IWM, the realisation of *deimhin* as /əi/ implies that //e// was not raised to /i/ in this word before the vocalisation of //ṽ'//. Since //e// has usually been raised before //ṽ'//, this would support our contention that the nasality of the first syllable was lost before the vocalisation of //ṽ'//. Similarly, in IR *deamhan* is realised as /əu/ which reflects the normal development of //ev//. We may compare the development of *deamhan* /o:/ in Donegal dialects (DD, TY) which reflects the development of //ev//, rather than //eṽ// which normally yields /ãũ/. So also the general development of *domha(i)n*, discussed in chapter 5.

The development //eṽ'// > /aiv'/ (ICF), /av'/ (IT, IE) in the word *reimhre* (*reimhe* with dissimilation in IE) may imply that //e// was lowered to /a/ following /R/ < //R'//, although it is possible that /a/ here derives from the nominative /ãv/ *reamhar*. In IWM /əi/ occurs in *reimhirse* for an expected /i:/ which may imply that nasalation was lost in this word before the vocalisation of //ṽ'//.[35] The lowering effect of the preceding /r/ < /R/ < //R'// cannnot, however, be ruled out.

The development of //e// > /u:/ in *leamhnacht, deamhan* in ICF may represent a raising of /o:/ in a nasal environment. For /o:/ in these words, see DD.[36] Alternatively the development //eṽ// > /u:/ may be explained as the result of the smoothing of a *u*-gliding diphthong to /u:/ rather than /o:/ in a nasal environment.

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[34]Note that IR, unlike IWM, has /əu/ for //ev//.

[35]Note that /əi/ is the expected development of intervocalic //ev'// in IWM, e.g. /əi/ *Eibhilín*. But note that *reimhre* is realised as /i:/ in IWM.

[36]In which case it appears not to be nasalised.

(iii) __ F[+voice] [+dental]\[+velar]

__ ð/ɣ#

The development of //eð/ɣ// in absolute final position is illustrated in the following table:

	IWM	IR	ICF	IT	IE	DD	TY
is eadh	a	a	a	a	a	a	**e:**[37]
sleagh	--	--	--	a	--	ig~**əɯ**[38]	i[39]
cneadh	a	--	--	--	--	--	--
sneadh	--	--	a	--	**a:**	--	--
feadh[40]	--	--	**a:**	--	**a:**	**a:**~**əɯ**[41]	oɣ[42]
ar feadh[43]	a	a	a	--	a	--	oɣ
meadh[44]	a[45]	--[46]	**a:**[47]	--	--	a	**a:**[48]
leagh	--	--	**a:**[49]	--	--	--	--

Table 4A.16: //eð/ɣ//#

It is clear from table 4A.16 that //e// has generally been lowered to /a/ before original word final //ð/ɣ// without lengthening in most cases, the only exception being Donegal dialects where lengthening to /e:/, raising to /i/ and /o/, and diphthongisation to /əɯ/ has also occurred.[50] I claim that those instances which appear to imply the lengthening of original //e// to /a:/ can be explained as instances of analogy and back formation, with the possible exception of *is eadh* in some Donegal dialects (TY). It is significant that /a:/ occurs in the nouns *sneadh* (IE), *feadh* (ICF, IE, DD) and in the verbal roots *meadh* (ICF), *leagh* (ICF). However, leaving these words aside, it follows from table 4A.16 that /a/ is the normal development of //eð/ɣ//# sequences in all Irish dialects except Donegal in this environment. This being the case, it is most likely that forms with /a:/ are analogical forms or back formations based on bimorphemic forms where

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[37]Phonetically [ɛi].

[38]The latter /əɯ/ only with the oldest people, DD: 63.

[39]Hamilton derives from *sleigh*, perhaps intended as an oblique form (dative singular) but /i/ is just as derivable from *sleagh*. Cf. *sleagh* /ig/ DD.

[40]'fathom'.

[41]The latter form with the oldest people only, DD: 63. The form /a:/ occurs, significantly perhaps in the phrase *dhá fheadh* /ɣa: a:/ 'two fathoms', DD: 10.

[42]But /e:/ *feadha* (pl).

[43]Complex preposition.

[44]'scale, balance' unless other wise stated.

[45]But *meadha* /a:/ (pl).

[46]*meáite* /m'a:t'ə/ from *meadh* (vb)occurs for *meadh+te* where we might expect /a/ but /a:/ has no doubt been modelled on forms like *meadhaigh* /a:/ etc.

[47]*meadh* (vb). De Bhaldraithe derives the verbal root from *meadh* /a:/ but this could derive from *meadhaigh* (vb). Cf. *meadhaigh* IT, IE s.v. *meadhuighim, meadaighim*.

[48]*meadh* [a:] (vb) but *meadha* [ɑ:] (pl).

[49]*leagh* (PAST).

[50]I do not include *deagh-* here since being a prefix, it frequently occurs preconsonantally, where we would expect lengthening of //e// before /ɣ//.

//ð/ɣ// occurs intervocalically. In other words *sneadh, feadh* with /a:/ are based on the plural forms *sneadha(nna), feadha(nna)* for which /a:/ is the normal phonetic development in bimorphemic sequences involving -/a/# + #/ə/-, see below. Similarly, *meadh, leagh* /a:/ may be based on *meadhaim, meadhadh, leaghaim, leaghadh* etc. where /a:/ is the normal phonetic development of bimorphemic sequences -/a/# + #/ə/-. Raising to /o/ and /i/ is normal before /ɣ/ < //ð/ɣ// in Donegal dialects. Lengthening to /e:/ in *is eadh* may be a legitimate development of //eð/ɣ// in TY. However, analogy or contamination with the masculine pronoun *é* /e:/ cannot be ruled out.

__ ð/ɣC,V

In the environments __ ð/ɣC,V diphthongisation and vowel lengthening are both attested in all Irish dialects, but to varying degrees, except in Donegal where lengthening is the norm. Diphthongisation appears to be the norm in Munster and some southern Connacht dialects whereas lengthening appears to be the norm in most Connacht and Donegal dialects. In the case of some Connacht dialects (e.g. IT, ICF) it is difficult to ascertain which is the major development, diphthongisation or lengthening. The following table illustrates the distribution between long vowels and diphthongs which have developed from //eð/ɣ//, although it has to be said that instances of //eð/ɣ// are scarce in the monographs:[51]

The development of //eð/ɣ// prevocalically and preconsonantally is illustrated in the following table and in the tables and charts which ensue.

[51]For instance, the lexeme *teaghlach* occurs only in DD and TY and is attested in LASID mostly in Donegal dialects, see LASID II, III, IV, Q. 1009 and map 11.

	IWM	IR	ICF	IT	IE	DD	TY
breaghdha	a:	a:	a:	a:	a:	e:	e:~a:
meadhacha(i)n[52]	a:[53]	a:	a:	a:[54]	a:[55]	a:	a:
feadha(i)n	--	--	a:	--	a:	--	--
leaghadh	əi	əi	a:	a:	a:[56]	e:[57]	e:
bleaghan	--[58]	--	a:	--	a:	ig	--
deagh-	a[59]	--	a:	a:	a:	e:	--
feadh(a)[60]	--	--	a:	--	a:	a:	e:(pl)[61]
sneadha[ch(án)]	--	--	a:[62]	--	a:[63]	--	--
leadhb	əi	əi	ai	iə?	--	e:	e:
leaghma	--	--	--	--	a:[64]	--	--
meadhg	əi	əi	ai	əi	--	e:	e:
Meadhbh(a)	--	--	--	--	--	e:	e:
feadhmannta	əi[65]	--	--	--	--	e:	--
teaghlach	--	--	--	--	--	iɣ	əɯ
meadhair	əi	əi	ai	əi[66]	əi	--	oɣ

Table 4A.17

Table 4A.17 may be analysed as follows:

	IWM	IR	ICF	IT	IE	DD	TY
Total no. of returns	8	6	11	7	10	11	9
VV%	63%	67%	27%	43%	10%	0%	11%
V: %	25%	33%	73%	57%	90%	82%	67%

Table 4A.18

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[52]Also *meadhaim* etc.

[53]/a:/ also in *meadha* (pl) but cf. /a/ *meadh*. Also /a:/ in *meadhadh* (vn).

[54]The form /va:jə ʃe:/ occurs for the PAST *mheadhaigh*. I interpret this form as containing a reduplicated verbal ending /ə/ *-aigh* i.e. the expected form /va:j/ *meadhaigh* with the verbal suffix /ə/ *-aigh* added on.

[55]The form /m'a:ji:N/ *meadhaigheann* occurs. However, the consonant /j/ intervenes between verbal roots with final vowels and verbal suffixes containing /i:/, see IE: §598, p. 214.

[56]The form /L'a:jim'/ *leaghaim* occurs. I interpret the /j/ as a verbal stem which has spread from verbal roots with historical final //ɣ'// e.g. *cráidhim* /kra:jim'/, see IE: 207. It is possible, though I think it unlikely, that /j/ represents a phonetic development of final //ɣ// in *leagh*. Cf. the suggestion made by O'Rahilly (1932: 178-82) that /ai/ *adharc* derives from a variant form *aidhearc*. For further discussion of this point, see below. My interpretation would seem to be supported by the fact that /j/ does not occur in the verbal noun *leaghadh* /L'a:w/, IE: 16.

[57]*leaghaim* (vb) 'I melt'.

[58]*crú* occurs in Munster dialects, see LASID I: 19.

[59]/daj/ before palatal consonants e.g. *deigh-ghníomh*.

[60]'fathom'.

[61]/e:/ (pl) but /oɣ/ (sg).

[62]But /a/ *sneadh*.

[63]/a:/ here probably derives from the plural form *sneadha(nna)*.

[64]Could be a back formation based on singular *leagham*, see IE: 240 s.v. *leagham*.

[65]*feadhmannas*. Vowel possibly influenced by vowel in *feidhm*.

[66]*meadhrach*.

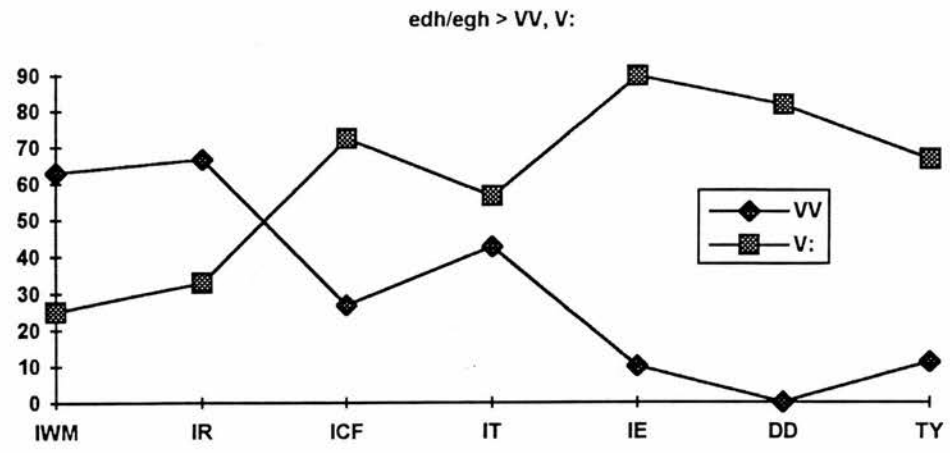

Chart 4A.2

Table 4A.18 and chart 4A.2 show that dipthongisation is more common than lengthening in Munster dialects but that lengthening is more common than diphthongisation in Connacht and especially in Donegal dialects. The cross-over of chart lines in chart 4A.2 indicates an important difference between Munster and, Connacht and Donegal dialects. If we consider the development of //eð/ɣ// prevocalically and preconsonantally, we see that the global picture just presented holds true for the prevocalic environment but not the preconsonantal environment, see tables 4A.19-20 and charts 4A.3-4 below. Chart 4A.4 shows that dipthongisation is more common preconsonantally in Munster and in south and mid Connacht dialects (IWM, IR and ICF, IT); in north Connacht and Donegal dialects, however, lengthening is far more common in the preconsonantal position.

__ V	IWM	IR	ICF	IT	IE	DD	TY
Total no. of returns	4	3	8	4	8	5	4
VV%	50	67	12	25	12	0	0
V: %	25	33	88	75	88	80	50

Table 4A.19: //eð/ɣ// / __ V, #

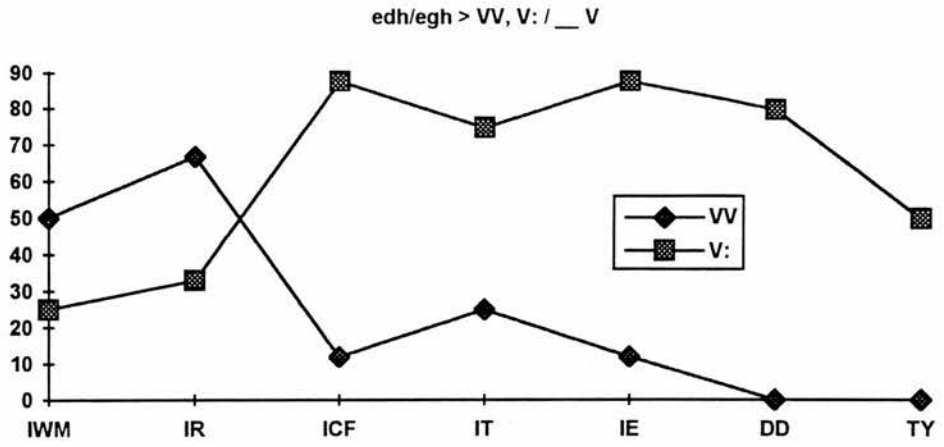

Chart 4A.3

__ C	IWM	IR	ICF	IT	IE	DD	TY
Total no. of returns	4	3	3	3	2	6	5
VV%	75	67	67	67	0	0	20
V: %	25	33	33	33	100[67]	83	80

Table 4A.20: //eð/ɣ// / __ C

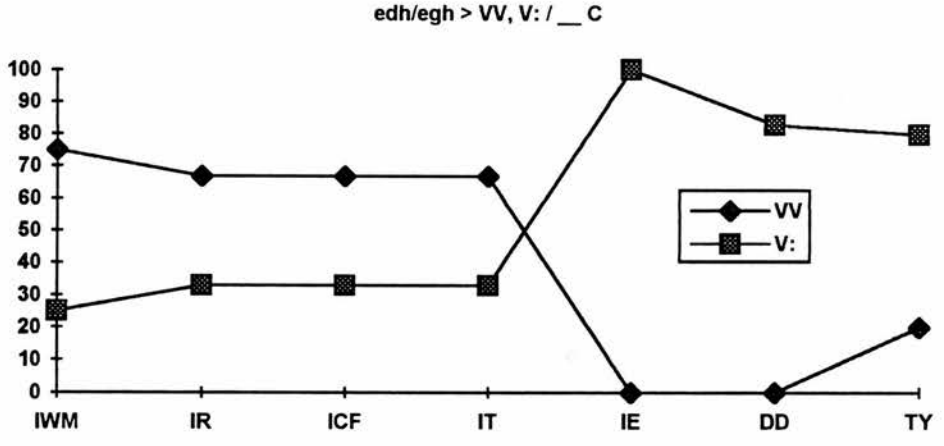

Chart 4A.4

Our charts illustrate that the development of //e// before prevocalic and preconsonantal //ð/ɣ// has been identical within Munster dialects, and within Donegal dialects but somewhat different in both environments in Connacht dialects. Connacht represents a transitional zone: before prevocalic //ð/ɣ//, the development of //e// in

[67] *leaghma* (pl?) /a:/ may be a back formation based on *leagham* /a:/, see IE: 240, s.v. *leagham*.

Connacht appears to have developed similarly to Donegal dialects, i.e. lengthening;[68] before preconsonantal //ð/ɣ//, //e// appears to have developed similarly to Munster dialects.

Munster and Connacht

At first glance, the development of prevocalic //eð/ɣ// and //að/ɣ// sequences appears to be quite different in both Connacht (and Munster) dialects, see charts 3A.2 and 4A.3. In particular, lengthening appears to be more common in //eð/ɣə// sequences than in //að/ɣə// sequences where diphthongisation is the norm. We claim that this apparent difference in development is due to the different outcome of bimorphemic //eð/ɣə// sequences and analogical developments, which yields lengthening to /a:/, as opposed to monomorphemic //eð/ɣə// sequences which yield diphthongisation. This may be illustrated by the development of /a:/ *meadhaim* ({*meadh*} + {*aim*}), and /əi/ *meadhair* and /əi/ *meadhg* (> *meadhag* with epenthesis). The development of prevocalic //eð/ɣ// in Connacht dialects may be summarised as:

(A) //að/ɣ// → /əi/ / __ ə
(B) //að/ɣ// → /a:/ / __ + ə

Rule 4A.1

The second part of this rule applies facultatively in Munster as is seen by the developments in /əi/ *leaghadh* and /a:/ *meadhadh* (both bimorphemic).

We noted in chapter 3 that O'Rahilly (1932: 178-9) and McManus (1994: 354-5) both explain the development of *i*-gliding diphthongs in words containing //að/ɣ// as deriving from alternative forms containing //að'/ɣ'// and provide examples from the literature such as *adharc : aidherc, aghaidh : aighidh, laghat : laighet*. O'Rahilly's treatment of the development of //eð/ɣ// is somewhat cursory. In particular, he does not refer explicitly to the development of *i*-gliding diphthongs arising from //eð/ɣ// sequences. We deduce from this that he considered that //eð/ɣ// sequences had developed in a similar fashion to //að/ɣ// sequences, namely deriving them from variant forms with palatal //ð'/ɣ'//. Although O'Rahilly provides no examples from the literature of //eð/ɣ// ~ //eð'/ɣ'// variation, McManus gives *deaghailt~deighilt* < Old Irish *dedail*. We have argued against O'Rahilly's hypothesis in our discussion of the development of //að/ɣ// sequences in Irish and claim that our alternative explanation

[68]However, note that /əi/ occurs in *meadhair* in Connacht as well as Munster dialects. Indeed, we argue below that lengthening in //eð/ɣV// sequences in Connacht dialects does not represent the normal development of prevocalic //eð/ɣ//.

of the development of //að/ɣ// holds also for the development of //eð/ɣ//.[69] In particular, we argue that orthographical forms with 'slender' *dh/gh* in literary sources, reflect vocalic developments rather than consonantal substitutions or replacements.

//eð/ɣ// / __ ə

Leaving aside the question of whether or not //e// was lowered to /a/ before the vocalisation of //ð/ɣ//, we will denote reflexes of //e// with the arbitrary symbol [E]. The vocalisation of /ɣ/ < //ð/ɣ// in //að/ɣə// sequences would have resulted in the disyllabic sequence /Eɯə/, where /ɯ/ is a velar approximant. In chapter 3, we claimed that the subsequent development of this velar approximant depended on the nature of the preceding vowel. Its development may be seen as one of assimilation to the preceding vowel, which may be expressed as follows:

/ɯ/	→	/w/	/ V[+back][+round] __	Rule 3A
	→	/j/	/ V[–back] __	

In particular, following //e//, the velar approximant was fronted to /j/. This [j] is attested in LASID in disyllabic forms, e.g. [l'ejən] *leaghann* 'melts' (pt 1, pt 5 etc.) LASID II, Q 720; *meadhg* [ejə] pt 18, 40; [ajə] pt 37 LASID II, III, Q 67 (see also map 10).[70] The reduction of disyllables to monosyllables resulted in the diphthong /əi/ in Munster and Connacht dialects. Our hypothesis may be summarised as follows:

//eð/ɣ/ə// > [Eɣə] > [Eɯə] > [Ejə] > /əi/[71]

A survey of the examples for the development of *i*-gliding diphthongs in Munster and Connacht dialects in reflexes of //að/ɣə// and //eð/ɣə// sequences shows that this

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[69]We do not pursue or explore here the possibility of *i*-gliding diphthongs having developed first in oblique forms such as *meidhg, leidhb* etc. which subsequently spread by analogy to nominative forms.

[70]It could be argued that the [ə] in such forms is a mere glide between [j] and the following broad consonant. *Meadhg* is attested as [iə] at two points in LASID, one in Munster (pt 8), the other in Donegal (pt 69 as a variant to /e:/). These may reflect the raising of the initial part of the diphthong [ei] (Munster) and the raising of [e:] following the nasal /m'/. Alternatively it is possible that //e// may have been raised to /i/ before the vocalisation of /ɣ/ < //ð// had occurred.

[71]It is possible that the development of *i*-gliding diphthongs may have been reinforced by inflected forms of words of the shape //að/ɣəC// where oblique forms of the shape //að/ɣiC'// could have yielded [A-i] following the vocalisation of /ɣ/, subsequently being reduced to give [əi]. It is conceivable that the vocalism of oblique forms may have affected nominative forms by a process of back formation. The development of //aðəC'// followed by a palatalised consonant may ostensively explain the development of *aghaidh* (< *adhaigh*) > /əi/ in the majority of Irish dialects, including some Donegal dialects where /əi/ also unexpectedly occurs, i.e. //aðəɣ'// = [aðiɣ'] > [A-iɣ'] > /əi/. Note, however, that Bergin (1907: 77) argues that *aiged,* with palatal //ɣ'//, may have been the original form.

development occurs frequently, if not always, in monomorphemic forms, thus part (A) of rule 4A.1. The development of /a:/ in Munster and Connacht dialects in //eð/ɣə// sequences occurs only in bimorphemic forms, e.g. *meadhadh* (vn), and as the result of analogical back formations, thus part (B) of rule 4A.1. Leaving aside the various analogical formations which are discussed below, the different outcome of reflexes of //ð/ɣ// at morpheme boundaries in rule 4A.1 part (B) is not strange in linguistic terms and can be taken as an example of juncture.

//eð/ɣ// / __ C

There are few instances of preconsonantal //eð/ɣ// sequences in the monographs. This is reflected in table 4A.17 where only *breaghdha, leadhb, meadhg* are regularly attested. In chapter 3, we claimed that epenthesis developed in Munster in the clusters //ð/ɣC//, C = /g b l n r v m?/.[72] If so, the distinction between prevocalic //eð/ɣ// and preconsonantal //eð/ɣ//, C = /g b l n r v m?/ is rendered superfluous. Rule 4A.1 may be refined as follows for Munster dialects:

	//eð/ɣ//	→	//eð/ɣə// / __ C	C = /g b l n r v m?/
1	//eð/ɣ//	→	/əi/ / __ ə	
2	//eð/ɣ//	→	/a:/ / __ + ə	
3	//eð/ɣ//	→	/a:/ / __ C,	C ≠ /g b l n r v m?/

This accounts for the Munster forms:

1	/əi/	*leadhb, meadhg, feadhmannas,*[73] *meadhair*
2	/a:/	*meadha (pl), meadhadh (vn), meadhacha(i)n*
3	/a:/	*breaghdha*

The development /əi/ in *leaghadh* (vn) follows rule 1 rather than expected rule 2. This implies that the perception of a morpheme boundary may have been lost in this word when /ɣ/ was vocalised.

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[72]The question marks indicate that there is insufficient evidence to establish with certainty whether or not a particular consonant may be included in this list. I have added /v/ based on the development in *meadhbhán* /əi/ 'a type of edible seaweed' (IR) although I have not included it in the above tables since the first syllable is synchronically unstressed. Cf. also /əi/ *badhbh* > *badhabh*.

[73]It is possible that *feadhmannas* (IWM) has been affected by /əi/ *feidhm*.

Rule 4A.1 may be modified as follows for Connacht dialects:

	//eð/ɣ//	→	//eð/ɣə// / __ C	C = /g b/
1	//eð/ɣ//	→	/əi/ / __ ə	
2	//eð/ɣ//	→	/a:/ / __ + ə	
3	//eð/ɣ//	→	/a:/ / __ C,	C ≠ /g b/

This accounts for the Connacht forms:

1	/əi/	*leadhb, meadhg, meadhair*
2	/a:/	*leaghadh, meadhacha(i)n, bleaghan, feadha, sneadha[ch(án)]*
3	/a:/	*breaghdha, leaghma, feadhna*[74]

The rules set out above for the development of //eð/ɣ// sequences show that the differences between Munster and Connacht dialects are due to differing domains for the development of epenthesis.

Donegal

The development of //eð/ɣ// and //að/ɣ// sequences are similar both prevocalically and preconsonantally: they both yield /ɤ:/ (DD) and /e:/ (DD). There are insufficient examples in Donegal monographs to observe the development of //eð/ɣ// preconsonantally. Therefore, it is not possible based on the reflexes of //eð/ɣ// sequences alone, to draw any conclusions about the development of epenthesis in Donegal dialects.

It is not clear how Donegal /ɤ:/ and /e:/ are to be best explained. The most likley developments are summarised here, based on our discussion in chapter 3:

//eð/ɣ//>	[Eɯ]	>	[ɤ:]				
//eð/ɣ//>	[Eɯ]	>	[ɤ:]	>	[e:]		
//eð/ɣ//>	[Eɯ]	>	[Ej]	(>	[əi])	>	[e:]

For possible derivations and further discussion, see chapter 3. A consideration of the development of //eɣ// in the word *teaghlach* in Donegal dialects reveals that there are four main developments of //eɣ// in the word *teaghlach*, the last two of which are relevant in explaining the developments to /ɤ:/ and /e:/. The development of //eɣ// in

[74]See discussion of *feadhain, feadhna* below.

teaghlach, based on LASID II, III, IV, Q. 1009 (see map 11), may be described as follows:

//eɣl// →	(A)	/og(ə)l/	south, south western dialects
	(B)	/oɣl/	(south) mid dialects
	(C)	/əɯl/	mid and northern dialects
	(D)	[eil]	northern dialects

In chapter 2, we interpreted instances of [ei] as members of the /e:/ phoneme. Even so, the development of a *i*-glide in dialects of type (D) requires some comment. Dialect area (D) is clearly contiguous to area (C) which normally has /əɯ/ reflexes of //eɣl//. Indeed in Inishowen (Wagner's point 68), both [eil] and [əɯl] occur. It seems inescapable from the geographical distribution of [ei] and [əɯ], and the variation between both in some dialects, that [ei] represents a secondary development of [əɯ]. The development [əɯ] → [ei] occurs as a result of the fronting of [ɯ] to [i]. Indeed, an intermediary stage [əy] is attested in Dunlewy (Wagner's point 76).[75] This observation has important implications. Firstly, it suggests that /e:/ [ei] may not in all instances have developed from an intermediate [ɤ:] in Donegal dialects, which represents an alternative development of /əɯ/.

The development of //eð/ɣ// sequences may be stated as follows:

1	//eð/ɣ//	→	/ɤ:/, /e:/ / __ V, C
2	//eð/ɣ//	→	/a:/ / __ + ə

This accounts for the Donegal forms:

1	/ɤ:/, /e:/	*leaghadh, breaghdha, leadhb, meadhg, Meadhbh(a), feadhmannta*
2	/a:/	*feadha* (pl), *meadhacha(i)n*

The occurrence of /a:/ in *breaghdha* (TY) if it is not a dialectal borrowing may be explained as a bimorphemic form, in which case /a:/ would be the expected development. If so, occurrences of /e:/ in some dialects may be the result of a secondary raising of /a:/.[76] That the rule //eð/ɣ// → /a:/ / __ + ə operates only facultatively is seen by the occurrence of /e:/ in *feadha* (pl) (TY).

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[75]Wangner (LASID I: xxiii) describes [y] as 'a palatalized form of [ɯ]. It is, therefore, an unrounded variety of German ü'.

[76]For the raising of /a:/ to /e:/ in Donegal dialects, see Ó Dochartaigh (1987: 64 ff.).

//eð/ɣ// / __ V:

That the developments //eð/ɣ// > /əi/, /e:/, /əɯ/ outlined above did not occur when //ð/ɣ// was followed by a long vowel is exemplified by the development of *meadhán/ meadhón* and *sleaghán* in Irish dialects:[77]

	IWM	IR	ICF	IT	IE	DD	TY
meadhán, meadhón	a:	a:~u:[78]	a:	--	a:	a:	a:~e:
sleaghán	a:	--	a:	a:	a:	a:	ă:~e:

Table 4A.21

Apparent exceptions to the rules presented above

This leaves us to consider the remaining apparent exceptions to our rules which can be categorised into the following groups:

(i) /a:/ *feadhan* (Connacht)
(ii) /a:/ *bleaghan* (Connacht)

(i) /a:/ feadhan (Connacht)

The exceptional development of lengthening to /a:/ in Connacht *feadhan* encourages us to look for an alternative explanation for its synchronic form. The word *feadha(i)n* occurs commonly in the genitive in the phrase *ceann feadhna* and in the plural form *feadhna*. Epenthesis would not have developed in *feadhna* in Connacht dialects since epenthesis is not expected in the clusters //ð/ɣn//, especially in the homorganic cluster //ðn// in Connacht dialects. According to the rules set out above for Connacht, the vocalisation of //ð/ɣ// before //n// would regularly have resulted in lengthening to /a:/.[79] The frequent occurrence of *feadhna* in the genitive and in plural forms could have led by analogy to the development of a nominative form *feadha(i)n* with /a:/.[80] In any case, Connacht /a:/ is unlikely to derive regularly from //eðə//.

(ii) /a:/ bleaghan (Connacht)

It follows from LASID I: 19 that /a:/ *bleaghan* is the normal form throughout Connacht, but /b'l'oɣən/ and /bl'iə/ *blighe* are the normal forms in Donegal. A different etymon *crú* occurs in Munster. It is unlikely that the Connacht form /a:/ *bleaghan*

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[77]Note, however, the variant form *meidheón* quoted in DIL s.v. *medón*.
[78]/u:/ only occurs in the phrase *as miún* derived by Breatnach from *as meadhón*, IR: 128.
[79]Cf. *leaghma* /a:/ IE.
[80]De Bhaldraithe GCF: 338 s.v. *feadhain* notes that *feadhain* only occurs in the phrases *ceann feadhain* and *ar an bhfeadhain*.

derives from //eɣə// since we would expect /əi/ if such were the case. We can offer two possible explanations for the anomolous development:

(a) *Bleaghan* can be derived as bimorphemic {*bleagh*} + {*án*}, in which case, according to our rules, /a:/ would be the normal development.

(b) The Connacht form may derive from **bleaghán* rather than from *bleaghan* in which case /a:/ would be the expected development. Compare /a:/ *sleaghán, meadhán* discussed above; see table 4A.21. However, **bleaghán* is not attested in the literary sources so far as I am aware. Alternatively, it is possible that the Connacht form derives from *bleaghón*, which occurs (as *blegón*) in the twelfth century *Leabhar na hUidhre*, see DIL s.v. *blegon*. It is possible that **bleaghán* may have developed from *bleaghón* with substitution of the common ending *-án* for the less common ending *-ón*. Alternatively, it could be argued that the disyllabic sequence //eɣo:// was reduced to monosyllabic /a:/ rather than /o:/ in Connacht dialects. With the development suggested here, we may compare the development of *meadhón*, DIL s.v. *medón* which is realised as /a:/ frequently in Irish dialects (but cf. /u:/ IR).

Further exceptions

O'Rahilly (IDPP: 181) provides three further exceptions to our rules for Munster dialects although he does not regard them as exceptions. These are /a:/ *spleadhach, Ó Deaghaidh, Ó Meadhra*. Meyer (1891: 463) derives *spleadh(ach)* from Anglo-Saxon *plega* 'play'. See also DIL s.v. *spled*. The editors of LEIA: S: 178, s.v. *spled* suggest a comparison with Welsh *ysbleddach*. The development of /a:/ in *spleadhach, spleadh(a)chas, spleadhaighim* etc. may be explained as a result of the rule //eð/ɣ// → /a:/ which applies in bimorphemic sequences {//eð/ɣ//}+{/ə/-}.

The development to /a:/ from the sequence //eɣið'// is unexpected in the surname *Ó Deaghaidh*. We might expect /əi(g')/ on the pattern of *aghaidh* /əig'/. According to Woulfe (1923: 494-5 s.v. *Ó Deaghaidh*), the name pertains to Munster only. However, when final *-igh, -idh* had no inflectional value, the final fricative appears to have been lost in Munster dialects, see IDPP: 54. This would imply that the modern reflexes of the surname *Ó Deaghaidh* better reflect the from **Ó Deagha*. Cf. *Ó Dálaigh* > *Ó Dála*. However, we would still expect /əi/ as the normal development here. That this may have been the development in some dialects is perhaps suggested by the Anglicised forms *O Daye, O Deay*, see Woulfe (1923: 494 s.v. *Ó Deaghaidh*). Woulfe (1923: ibid) explains the surname as 'descendant of *Deaghadh*'. However, the

earliest forms of the name imply an underlying //ð// rather than //ɣ//, see DIL s.v. *Dedad*. The disyllabic form *Deaadh* also occurs (DIL ibid) which suggests (a) that the name may derive originally from a disyllabic form with hiatus *Dea-adh* or (b) that a disyllabic form with hiatus may have come about through haplology whereby the first dental fricative was lost. If the surname is to be derived from the form with hiatus, the synchronic reflex /a:/, while it would regularly derive from the reduction of disyllabic /a-ə/ (cf. *lá* /a:/ < /a-ə/), would imply that original //e// had been lowered to /a/ before the loss of hiatus in Irish. Jackson (1951: 86) notes that hiatus words were contracted 'early in the tenth century' and perhaps 'even earlier' in Irish. This would place the lowering of //e// to /a/ as early as the tenth century in Irish. Such an early date is not out of the question. Cf. our discussion below from manuscript evidence for the development //e// > /a/.[81] Could the name derive or have been affected by the English surnames *Daw(e), Day(e)*?

According to Woulfe (1923: 614 s.v. *Ó Meadhra*), the surname *Ó Meadhra* is originally a Co. Tipperary name. We would expect /əi/ as the regular development in this name if it derives directly from *Ó Meadhra*. It is possible that the name was common in a dialectal area where epenthesis did not develop in the cluster //ðr// in which case /a:/ would be the expected development. Cf. *adhradh* /a:/ (Connacht), *breaghdha* /a:/ etc. Alternatively, it is possible that the sequence //eð/ɣ// may have developed differently in proper names than in normal lexical items. Another possibility which should be mentioned is that realisations with /a:/ may reflect a borrowing of a similar English name *Mara*?

The discussion so far explains the difference in treatment of //e// before (a) word final //ð/ɣ//, normally /a/; (b) prevocalic //ð/ɣ//, normally /əi/ Munster, Connacht, /e:/ Donegal; (c) preconsonantal //ð/ɣ//, normally /a:/.

A comparison of the development of //að/ɣ// and //eð/ɣ// shows that both have developed in exactly the same way as the following table illustrates (with only a few minor exceptions):

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[81] Alternative explanations of the surname *Ó Deaghaidh* include (a) the possible derivation from *Ó Deaghdha* (cf. *breaghdha* /a:/) and (b) the interpretation of *Deagha(i)dh* as containing the name {*deagh*} + {inflectional ending}.

	IWM	IR	ICF	IT	IE	DD	TY
/eð /ɣ//							
Major:	əi	əi, a:	a:, ai	a:, əi	a:, əi	e:	e:
Minor:	a:	--	--	--	--	a:, ig	a:, o

Table 4A.23

	IWM	IR	ICF	IT	IE	DD	TY
//að /ɣ//							
Major:	əi	əi	ai, a:	əi, a:	əi, a:	e:	e:
Minor:	a:, e:	--	--	--	--	a:, əi	a:

Table 4A.24

It cannot be inferred from this evidence alone that //e// had been lowered to /a/ before the vocalisation of //ð/ɣ//. We have argued that the *i*-gliding diphthongs which have developed in the case of //að/ɣ// and //eð/ɣ// derive from [Ajə] and [Ejə] sequences respectively which arose through fronting of a velar approximant [ɯ]. The reduction of disyllables generally to monosyllables resulted in the development of *i*-gliding dipthongs [Ai] and [Ei]. From a phonemic point of view, these diphthongs were in complementary distribution, [Aj] following nonpalatals, [Ej] following palatals, and are thus analysable as allophonic variants of the same phoneme /əi/. This would be the case whether or not //e// had been lowered to /a/.

Lengthening of //e// to /a:/ in Irish dialects seems to imply that //e// was lowered to /a/ before the vocalisation of /ɣ/ < //ð/ɣ//, e.g. *breaghdha*. Lengthening of //e// to /e:/ in some Donegal dialects is ambiguous since original //a// has also yielded /e:/ before //ð/ɣ//. In Donegal, therefore, it is not certain if //e// was lowered to /a/ before the vocalisation of //ð/ɣ//.

NOTE:

In our discussion of the development of //að/ɣ// sequences in chapter 3, we suggested that //ɣ// may have been vocalised with different results to the vocalisation of //ð//. It was suggested that this might imply that the earlier reduction of //ɣ// may have led to the development of //ð// > /ɣ/. One interpretation of the evidence for the development of //eð/ɣ// sequences might support such a claim. We note that the lengthening of //e// to /a:/ occurs more frequently before original //ɣ// than before //ð//. Compare /a:/ in *leaghadh, bleaghan, breaghdha, deagh-* with /ai/, /əi/ in *leadhb* (> **leadhab*),

meadhg (> **meadhag*), *meadhair*.[82] Unfortunately *teaghlach* is not attested in the Connacht monographs which would enable us to test our hypothesis.[83]

(B) Before //ð' ɣ'//

The evidence for the development of //eð'/ɣ'// in the monographs is sparse. The most frequently occurring words are *feighil, leigheas, eidhean, feidhm* (and derivatives), *eidhneán*. Their realisations are illustrated in the following table:

	IWM	IR	ICF	IT	IE	DD	TY
leigheas	əi	əi	ai	əi	əi	**e:**	**e:**
eidhean	--	--	ev'	ev'	əi	**e:**	--
feighil	əi	--	--	--	--	--	--
feidhm-	əi	əi	ai	**e:**[84]	**e:**[85]	**e:**	**e:**~i
eidhneán	əi	fəi	--	--	--	--	--

Table 4A.25

Diphthongisation to /əi/ (/ai/ ICF) is the norm in Irish dialects with the exception of Donegal dialects where lengthening to /e:/ occurs. Clearly the development of //eð'/ɣ'// is similar to the development of//eð/ɣ// except that lengthening to /a:/ does not occur (in Connacht dialects). We note also that the development of //e// before //ð' ɣ'// is identical to the development of //a// before //ð' ɣ'// except in Donegal dialects as the following table illustrates:

	IWM	IR	ICF	IT	IE	DD	TY
//eð'/ɣ'//	əi	əi	ai	əi	əi	e:	e:
//að'/ɣ'//	əi	əi	ai	əi	əi	əi, (e:)[86]	e:, əi

Table 4A.26

The Donegal evidence suggests a different development in some cases for //a// and //e// before //ð' ɣ'// (always so in DD?). The *i*-gliding diphthong /əi/ occurs in *maighdean, saighdiúir, taidhbhse* where //ð'/ɣ'// occurred preconsonantally but /e:/ occurs in *claidheamh, saighead* where //ð'/ɣ'// occurred prevocalically. There does not appear to be such a contrast in words containing //eð'/ɣ'//. This difference may be

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[82]This does not apply to Munster dialects. Cf. *treaghaid* /əi/ IWM.

[83]The occurrence of the form [t'a:ləx] in Carna, LASID III, s.v. *teaghlach* is incorrect and misleading. This form, which is phonemically /t'aLəx/ is a reflex of *teallach*, not *teaghlach* as suggested by Wagner. On the use of *teallach* for *teaghlach*, see FGB s.v. *teallach*[2].

[84]In a poem and so possibly a high register form.

[85]In a poem and so possibly a high register form.

[86]/e:/ only attested in *claidheamh*.

more apparent than real since the evidence for the development of //e// in these environments is, as we have already noted, relatively meagre. The parallel development of //að'ɣ'// and //eð'ɣ'// in other Irish dialects may be due, in part, to the ascription of [Ai] < [Aj(ə)] and [Ei] < [Ej(ə)] to the same phoneme /əi/. Note that [Ai] and [Ei] would have been in complementary distribution.

Map 12 based on LASID II, II, IV: Q. 36, 7 provides an accurate picture of (i) the distribution of monophthongal and diphthongal reflexes of //eɣ'ə// in the lexeme *leigheas* and (ii) the distribution of monosyllabic and disyllabic reflexes of //eɣ'ə// in the lexeme *leigheas*. We note that monophthongs occur universally in Ulster (always /e:/ = [e:], [ɛ:]) whereas diphthongs (/əi/) occur in Connacht and Munster dialects. *Leigheas* has been reduced to a monosyllable in all Munster and the majority of Connacht dialects. The disyllabic structure of *leigheas* has been retained in some northern Connacht dialects and in many Donegal dialects. Clearly instances of /əi/ in monophthongal reflexes of *leigheas* derive from [ejə] which is attested in northern Connacht dialects. The reflexes of *leigheas* in Irish dialects show that there was clearly two different developments of //eð'ɣ'ə// = [ejə] in Irish dialects. The reduction of disyllabic [ejə] to a monosyllable has resulted in a long monophthing /e:/ in Ulster and in an *i*-gliding diphthong in other Irish dialects.

There is an astonishing contrast between reflexes of *adharc* and *leigheas* in Irish dialects from the point of view of syllabic structure, compare maps 12 and 6. The distribution of trimoraic reflexes of each are quite different. Trimoraic sequences are retained more frequently in Munster and Connacht dialects in *adharc* but never in Ulster. On the other hand trimoriac sequences are retained only in Ulster and some northern Connacht dialects in the case of *leigheas*.[87] A partial explanation of this stark contrast in development may be explained by *leigheas* (vn and noun) having been affected by the verbal adjective *leigheasta* where we would expect a trisyllable to be reduced to a disyllable, i.e. [L'ejəstə] > [L'əistə]. In Munster and Connacht, the retention of trimoraic sequences in *adharc* but not in *leigheas* may be due to the degree of velarisation of the following /r/ and /s/ respectively. We might expect unstressed [ə] to be more regularly retained before the relatively more velarised segment /r/, in Connacht dialects at least.

[87]That is if we analyse [e:ə] as phonemically /e:-ə/.

The development //eð'// > /ev'/ in the word *eidheann* is common in some southern and mid Connacht dialects. The change //ð'// > /v'/ is discussed in chapter 1, where it is claimed that it did not involve the intermediate stage of //ð'// > /ɣ'//.

(iv) __ SON#\+C[+hom]

Lengthening to /a:/ is general before //R// and //rC[+voice]// groups in all Irish dialects. Lengthening before //rC[–voice]// groups has not been noted; short vowels invariably occur in *ceart, ceirt, ceirtlín*. This would seem to imply that //e// was lowered to /a/ preceding //R// before lengthening took place. Ó Dochartaigh (1987: 81-82) points out that /e:/ is the normal development of //e// before //R// in East Ulster dialects and concludes that lengthening took place before the lowering of //e// to /a/ in these dialects. He supplies a relative chronology for the two sound shifts as follows, illustrated by the words *ferr* and *fer*:

East Ulster

	ferr	**fer**
Old Irish	/f'eR/	/f'er/
Lengthening before /R/	/f'e:R/	/f'er/
Lowering of /e/	/f'e:R/	/f'ar/

Donegal (and other Irish dialects [RÓM])

	ferr	**fer**
Old Irish	/f'eR/	/f'er/
Lowering of /e/	/f'aR/	/f'ar/
Lengthening before /R/	/f'a:R/	/f'ar/

This is an attractive argument. Nevertheless it does not take into account the possibilities of a lengthened /e:/ (perhaps a lower [ɛ:]) being lowered to /a:/ or indeed a lengthened /a:/ being raised to /e:/ (or /ɛ:/) in the environment C' __ R, see Ó Dochartaigh (1987: 64 ff.).

Diphthongisation of //e// to /au/ before //L N M// is the norm in Munster dialects. The development of *u*-gliding diphthongs may be seen as originating in *u*-on-glides before the velarised sonorants //L N M//. Lengthening to /a:/ is the norm in southern Connacht dialects whereas /a/ is the norm in most Connacht and Donegal dialects. The development of //e// before the sonorants //L N M// is identical to the development of //a// in the same environments. This may imply that //e// was lowered to /a/ before lengthening began to operate before the sonorants. This is certainly the case in Connacht dialects when //e// has been lengthened to /a:/ which presupposes an

underlying /a/. However, where diphthogisation has occurred, it is impossible to know whether or not //e// was lowered to /a/ before the development of diphthongisation. The reason for this is that the parallel development of the two word classes {//eL N M//} and {//aL N M//} can be explained in two ways: (a) the lowering of //e// to /a/; (b) *u*-gliding reflexes of //eL N M// and //aL N M//, i.e. [Eu] and [Au] respectively, would have occurred in complementary distribution, and are therefore analysable as variants of the same phoneme: [Eu] / C' __, [Au] / C __.

Diphthongisation to /əi/ is the norm before //L' N' M'// in Munster dialects. Lengthening to /i:/ is found before //N' M'// which may imply that //e// was raised to /i/ before the nasal sonorants.[88] Diphthongisation occurs before //L'// in southern Connacht dialects. Raising to /i/ with neither lengthening nor diphthongisation is the norm in other Connacht and Donegal dialects. The development of //e// before the palatalised sonorants is different from the development of both //a// and //o// in the same environments as the following table illustrates, although the development of //e// preceding //L' N' M'// more closely resembles the development of the mid vowel //o// than that of //a//.

	IWM	IR	ICF	IT	IE	DD	TY
//e//							
__ N' M'	əi	əi	i:	i	i	i	i
__ L'	əi	əi	ai	--	--	--	--
//a//							
__ L'N'M'	ai	ai	ai, a	a	a	a	a
//o//							
__ N' M'	i:	ai	i:, i	i	i	i	i
__ L'	i:	əi	ai	e	e	--	i

Table 4A.27: The Development of //e//, //a//, //o// before //L' N' M'//

[88]Although the smoothing of *i*-gliding diphthongs to /i:/ should perhaps not be ruled out.

Section B
Development of //e// in ScG

__ C, C ≠ F[+voice], SON#\+C[+hom]

The general development of //e// in ScG dialects is /e/ before C' and /ɛ/ before C. The developments //e// > /a/, /e/, /i/ in the environment C' __ C are common to all dialects and will be dealt with first.

//e// > /a/

Table 4B.1 sets illustrates the development of //e// > /a/ / C' __ C:

//e// > /a/, /ɛ/

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
beannaich	ã	ɛ [æ̈]	ɛ	a	a	a	ɔ(r)	a
ceannaich	ã	a	a	a	a	a	ɔ(r)	a, ɔ
feannag	--	ɛ [æ̈]	ɛ [ᵉa][1]	a	a	--	--	--
n/feanntag	--	--	--	a	a	a	--	a
teannaich	a	--	--	--	--	--	--	a, ɔ
ceangal	ɪ̃	ɛ̃ [ɛ̃]	ã	ã	ɛ	a	ɛ̃	ãũ
teanga(idh)	ɛ̃	ɛ [ɛ]	ɛ	ɛ̃	ɛ	a(g)	ɛ̃ɪ	ɛ
seangan	ɛ̃, ɪ̃, ɤ̃	--	--	--	--	ag	ɤ:, ũ:	--
feamainn[2]	ɛ	ɛ[3]	--	ɛ [ɛ]	ɛ	a	ɛ[4]	--
greamaich	--	--	--	--	--	--	--	a
geal	a	ɛ [æ]	a	--	a	a	ɔ	a
gealach	a	ɛ [æ]	a	a	a	a	ɔ	a
geall(adh)	a	--	--	o	a	a	əu:[5]	o
gealbhan	--	--	--	--	a	a	--	--
dealt	a	ɛ [æ]	a	--	--	--	--	a
dealbh	a	a	a	a	a	--	--	a
dealg-	a	--	--	--	a	--	--	a
eala	a	ɛ [æ̈]	ɛ [ᵉa]	ɛ [ᵉa]	a	--	--	a
speal	a	ɛ [æ]	ɛ [ᵉa]	ɛ [ᵉa], [ᵉæ]	a	--	--	a[6]
sealladh	a	--	--	o	--	--	o	o
sealbhach	a	--	--	--	--	--	--	--
sealg	--	a	--	--	a	--	--	a
teallach	a	--	--	--	--	--	--	--
eallach	a	ɛ [æ̈]	ɛ [ᵉa]	ɛ [ᵉa]	--	--	ɔ	--

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[1] *feannadh*.
[2] or *feamnach*.
[3] Ha etc. Not cited for Ba by Borgstrøm.
[4] *seaman*.
[5] *gealltainn*.
[6] 'bout'.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
earrach	a	ɛ [æ]	ɛ [^{e}æ]	ɛ [^{ɛ}æ]	--	a	a	a
earrainn	a	--	--	--	--	--	a	--
searrach	a	ɛ [æ]	ɛ [æ]	--	--	--	a	a
gearradh	a	ɛ [æ]	ɛ [æ]	ɛ	a	a	a	a
searbh	a	ɛ [æ]	--	--	--	--	--	a
(gu) dearbh	a	--	--	ɛ	ɛ	--	--	a
dearg	a	--	ɛ [ɛ]	ɛ	ɛ	ɛ	--	a
earbsa	--	--	ɛ	--	ɛ	--	--	a
ceart	a	ɛ [æ]	ɛ [æ]	ɛ [æ]	a	a	a	a
neart	a	ɛ [æ]	--	ɛ	ɛ	a	e, ɔ	ɛ, a
feart	--	--	--	--	--	--	a	--
beartach	a	--	--	--	--	--	e	--
dearcag	a[7]	--	ɛ	--	ɛ	ɛ	ɛ	a
cearc	ɛ	ɛ [æ]	ɛ [ɛ]	ɛ [ɛ]	ɛ	ɛ	ɛ	a
each	ɛ	ɛ [æ]	ɛ [ɛ]	ɛ [æ], [^{ɛ}a]	ɛ	ɛ	ɛa	ɛ
seach	--	--	--	--	--	a	--	--
seachad	ɛ	--	--	--	--	--	a[8]	ɛ, a
seachain	--	--	--	--	--	--	ɛ, a	ɛ
seachd	ɛ	ɛ [æ]	ɛ	ɛ	a	a	a	a
seachdain	ɛ	ɛ [æ]	ɛ	ɛ	ɛ	a	a	a
sneachd	ɛ̃	ɛ [ɛ]	ɛ	ɛ	ɛ	a	a	ɛ
cleachd	a	ɛ [æ]	ɛ	--	ɛ	a	ɛ	ɛ
teachd	a	--	--	--	--	a[9]	--	--
leaba	a	ɛ [æ]	ɛ	ɛ [ɛ]	a	a	a	ɛ
leapa	ɛ	ɛ [æ]	ɛ	ɛ [ɛ]	a	a	--	--
sean	--	ɛ [ɛ]	--	--	ɛ	ɛ	ɛ	ɛ; a, ɔ[10]
leanabh	a	--	--	ɛ	--	--	a	ɛ
leas[11]	ɛ	--	--	ɛ [ɛ]	--	--	e	i, e
leas[12]	a	ɛ [æ]	--	ɛ [ɛ]	e	--	--	e
eadar	a	e	--	e	e	--	ɤ	ɛ
eatarra	a	e	--	--	e	--	--	--

Table 4B.1

Table 4B.1 is analysed in the following table and chart. In the first row is given the total number of words which illustrate the development //e// > /a/ occurring in table 4B.1 from the relevant monograph. In the second row is found the total number of returns for each dialect. In the final third row the percentage of the occurrence of /a/ in each dialect is given. The numbers and percentages in brackets in the columns for Skye and Ross-shire represent the totals if we include instances of [^{e}a] and [^{ɛ}a] as

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[7]*dearcadh* 'looking'.
[8]*seachad* > *sachad*.
[9]Perhaps a reduction of *tidheachd*. See GA: 157.
[10]/a/, /ɔ/ when *sean* is attributive but /ɛ/ when predicative.
[11]'garden'.
[12]In phrase *cha leig/rig thu a leas*.

allophones of /a/, which Borgstrøm, however, takes to be allophones of the phoneme /ɛ/. See below for discussion.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
Words with /a/	33	3	6 (10)	7 (13)	18	23	13	28
Total number of returns in table 4B.1	45	32	26	31	35	28	33	41
Percentage of words with /a/	73	9	23 (38)	23 (42)	51	82	39	68

Table 4B.2

These results are represented in the following chart:

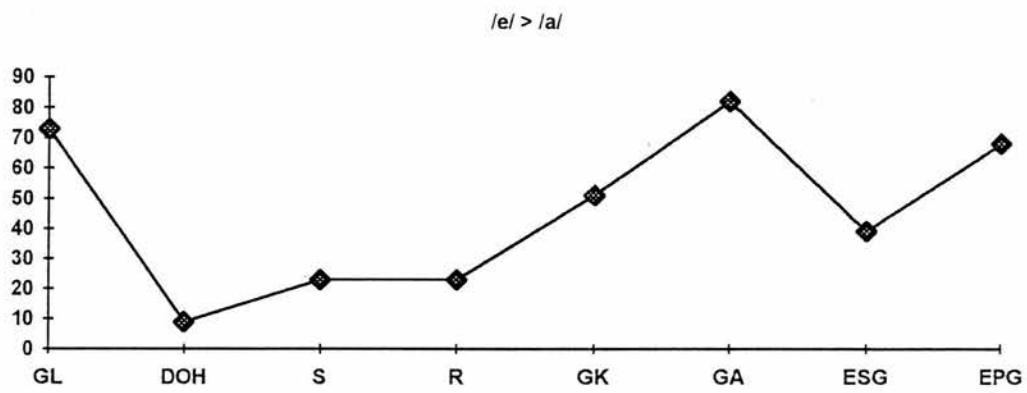

Chart 4B.1

This analysis gives us the following hierarchical ordering for the development //e// > /a/ in ScG dialects:

> Arran >> Leurbost >> East Perthshire >> Kintyre >> **East Sutherland** >> **Skye/Ross-shire** >> Barra

We arrive at the same result if we consider the number of different following consonantal environments in which the change //e// > /a/ has occurred. This number appears in the brackets following the name of each dialect area: Arran (10), Leurbost (10), East Perthshire (8), Kintyre (8), East Sutherland (5), Skye (2), Ross-shire (2), Barra (2). If we include instances of [^{e}a] and [$^{\varepsilon}$a], we get the following similar order:

> Arran >> Leurbost >> East Perthshire >> Kintyre >> **Ross-shire** >> **East Sutherland** >> **Skye** >> Barra

This implies that the change //e// > /a/ is most common in the so-called peripheral dialects and less common in the central dialects.[13] This provides a further instance of the innovatory nature of peripheral dialects and the conservative nature of central dialects, and warns against assuming that peripheral dialects are inherently conservative.[14]

Instances of [ᵉa] and [ᵋa]

Borgstrøm discusses instances of [ᵉa] in Skye dialects and [ᵋa] in Ross-shire dialects which occur as reflexes of //e// before //L N// in absolute initial position and following labial segments. His commentary on Skye dialects is given here in full:

> Initially before L (and N) there occurs a vowel which I transcribed [ᵉa] or [ᵉä], i.e. a front [a] preceded by a very short front articulation like [e]; the combination has not the character of an ordinary diphthong because the [e] is so short. Examples [ᵉaLəx] "burden" eallach; [ᵉaLə] "swan" eala. [ᵉa] is phonologically different both from [ja] (with clearly consonantic [j]) as in [ə jaLəx] "the moon" a' ghealach, and from [a] (generally more back or "flat", and without preceding [e]) as in [aLu] "quick", (mis)spelt ealamh, eathlamh, but in M. Ir. athlom. [ᵉa] can hardly represent anything else in the system than the phoneme /ɛ/. Exactly the same pronunciation occurs after labials, only that then the short [e] is partly simultaneous with the labial, which thus becomes palatalised e.g. [fᵉaNəɣ] "flaying" feannadh; [mᵉ[aLa]k] "milt of fish" mealg; [spᵉaL] "scythe" speal . . . . Before [R] there occurs a rather open [æ] preceded by short [e] as above, eg. [ᵉæRəx] "spring-time" earrach; so also after labials, which are palatalised: [bᵉæʂt'] "a load" beart, beirt ([ʂ] = /Rs/).
> (SR: §6.1, p. 11)

About Ross-shire dialects, he has this to say:

> Before [L], [N] and often before [x] there is a sound [ᵋa] or [ᵋæ], i.e. a front [a] or an open [æ] which begins as a mere closed [ɛ]. This sound occurs initially and after labials, and can hardly be more than a variant of /ɛ/.[15] [ᵋaLə] "swan" M. Ir. ela; [ᵋaLəx] "burden" M. Ir. ellach; [spᵋaL], [spᵋæL] "a scythe" M. Ir. spel; [ᵋax] beside [æ] (Red P.) "horse" O. Ir. ech. But sometimes this sound develops into a group [i̯a] i.e. a half consonantic [i̯] (variant of the phoneme /j/) + a flat or back [a]; [i̯[aLa]v] . . . "a little . . ." ealbh . . .; [bi̯aNɔxk] "benediction" O. Ir. bendacht, [fi̯aNak] "a crow" feannag.
> (SR: §5.1(d), p. 69-70)

Borgstrøm also describes the 'peculiar sound' which occurs in Barra 'initially before [L] and after labials before [N]'. He says:

---

[13]Lewis dialects are mixed in that they pattern with both central and peripheral dialects, depending on the linguistic feature involved.

[14]I assume here that instances of /e/, /ɛ/ in ScG dialects do not represent secondary raisings of /a/ earlier lowered from //e//, see discussion below.

[15]Borgstrøm uses the symbol /æ/; I use /ɛ/.

> [æ̈] begins as an open [e]-sound and ends as a very open [æ], almost an [a]; this sound is surely to be regarded as one phoneme, /ɛ/.[16] [æ̈Lɔ̃] "swan" M. Ir. ela; [æ̈Ləsæt'] "Elisabeth Ealasaid; [æ̈Ləstær'] "Alexander Alasdair; [bæ̈Nɔ̃xk] "blessing" O. Ir. bendacht; [fæ̈Nak] "a crow" feannag. After other consonants the phoneme seems to be /a/, e.g. [k'aNɔ̃x] "to buy" ceannach. (DOH: §167.3, p. 134)

Borgstrøm clearly interprets instances of [^{e}a] and [$^{\varepsilon}$a] in the dialects of Skye, Rossshire and Barra as variants of the phoneme /ɛ/. Borgstrøm did not consider the possibility of interpreting such sequences as /a/ preceded by a phonemic semivowel /j/ which is the solution put forward by Ternes for the dialect of Applecross in Rossshire. Ternes reminds us that his conclusion 'applies only to the Applecross dialect' and 'for other dialects, the problem will have to be reconsidered, because the phonetic data involved vary to some extent from one dialect to another' (Ternes 1973: 33). Until Borgstrøm's limited data is considered alongside a more detailed study of these vocalic sequences in the dialects studied by Borgstrøm, the phonemic status of [^{e}a] and [$^{\varepsilon}$a] must remain undecided for these dialects. Ternes (1973: 45) points out that a number of Borgstrøm's

> phonemic conclusions . . . which are of a tentative nature, are not in every case reliable. When trying to evaluate a particular problem, he does not assess the consequences of a particular interpretation on the phonemic (and/or morphophonemic) system as a whole.

For this reason I prefer to leave open the phonemic interpretation of [^{e}a] and [$^{\varepsilon}$a] for the purposes of the present study.

The following table summarises the evidence for the change //e// > /a/ in terms of the following consonantal environment. /a/ indicates that /a/ has been attested for //e// in the given environment.

[16]Borgstrøm uses the symbol /æ/; I use /ɛ/.

//e// > /a/ by following consonantal environment:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG	
__N	a	a[17]	a[18]	a	a	a	ɔ	a, ɔ	7
__l	a	a[19]	a	a	a	a	--	a	7
__L	a	ɛ	ɛ ([ᵉa])	o ([ᵉa])	a	a	ɔ	o	3 (5)
__R	a	ɛ	ɛ	ɛ	a	a	a	a	5
__rt	a	ɛ	ɛ	ɛ	a	a	a	a	5
__x	a[20]	ɛ	ɛ	ɛ ([ᵉa])	a[21]	a	a	ɛ, a	5 (6)
__b	a	ɛ	ɛ	ɛ	a	a	a	ɛ	4
__p	ɛ	ɛ	ɛ	ɛ	a	a	--	--	2
__rk	ɛ	ɛ	ɛ	ɛ	ɛ	ɛ	ɛ	a	1
__ŋ	ɪ̃, ɛ̃, ɐ̃, ɤ̃	ɛ̃	ɛ	ɛ̃	ɛ	a	ɛ̃ etc.	ɛ̃ etc.	1
__m	ɛ	ɛ	--	ɛ	ɛ	a	ɛ	a	2
__n	a	ɛ	--	ɛ	ɛ	ɛ	a, ɛ	a, ɛ	3
__d	a	e	--	e	e	--	ɤ	ɛ	1
__s	a	ɛ	--	ɛ	e	--	e	e	1

Table 4B.3

The numbers in the last column refer to the number of dialects for which the change //e// > /a/ is attested in that particular environment. Numbers in brackets refer to totals if we admit instances of [ᵉa]. These results are illustrated in the following graph:

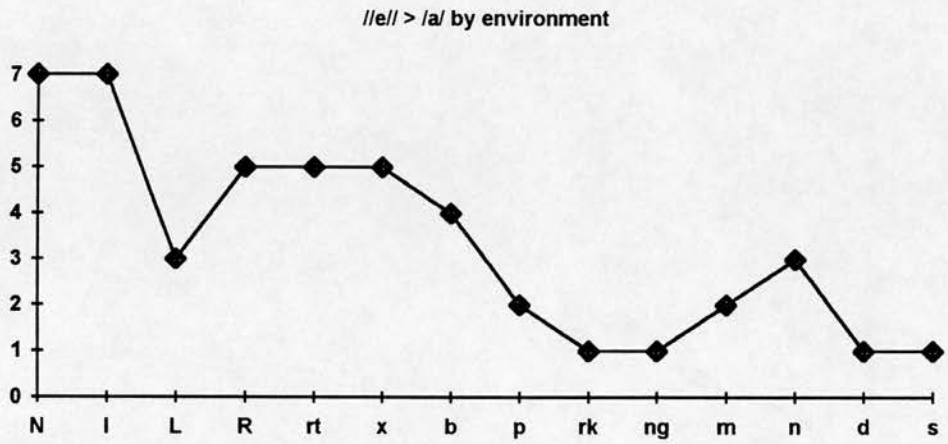

Chart 4B.2

The hierarchical ordering given below emerges in terms of the following consonantal environment for which the change is attested:

---

[17]But apparently not following labials.
[18]But apparently not following labials.
[19]Only attested in *dealbh, sealg*, both containing svarabhakti syllables.
[20]But apparently not following /ʃ/.
[21]Only in *seachd*.

N = l >> R = rt = x >> b >> L = n >> p = m >> rk = ŋ = d = s

or, if we admit instances of [ᵉa]:

N = l >> x >> L = R = rt >> b >> n >> p = m >> rk = ŋ = d = s[22]

The most common environments for the change //e// > /a/ according to the evidence of the monographs used for the purposes of the present study are therefore:[23]

__ N, l, x, L, R, rt

These segments share the common distinctive feature of [+velarised],[24] except /x/ which is of course [+velar], thus implying that the most conducive environment for the lowering of original //e// to /a/ in ScG has been before velarised consonants and the velar fricative /x/. Our analysis also reveals that in the environments __ N, l original //e// has been lowered to /a/ in all ScG dialects.[25]

//e// > /e/ / C' __ C

The following table illustrates the development //e// > /e/ in the environment C' __ C:

//e// > /e/ in ScG

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
__ g								
beag	e	e	e	e	e	e	e	e, ɤ
eaglais	e, ɤ	e	--	--	e	e	--	e
(f)eagal	e	e	e	e	e[26]	e	e	e
teagamh	ɤ	--	e	e	--	e	--	ɛ
teagasg	ɤ	e	--	e	--	--	--	--
creag	ɤ	e	--	--	e	e, ø	e	--
freagairt	ɤ	e	ɤ[27]	--	e	e	e	e
freagarrach	--	e	--	--	--	--	--	e
leagail	--	--	--	e	--	e	--	--

[22]The results presented here, being based on a limited corpus, are naturally tentative. The fact that lowering appears to occur more commonly before //l// than before //L// (although //l// and //L// have merged in most ScG dialects, see chapter 1) may be partly due to the fact that instances of //eL// are rarer in the monographs than instances of //el//.

[23]Because of the vocalisation of voiced fricatives, it is not clear how the fricatives should fit into this ordering.

[24]Note that *r* in original //rt// is synchronically a member of the //R// phoneme.

[25]If we assume that ESG /ɔ/ is a secondary development of /a/ < //e//.

[26]*eagalach*.

[27]AV, Km.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
__d								
eadar	a	**e**	--	**e**	**e**	--	ɤ	ɛ
eatarra	a	**e**	--	--	**e**	--	--	--
cead	ɛ	**e**	**e**	ɛ	**e**	--	**e**, ɛ[28]	ɛ
fead-	ɛ	**e**	--	ɛ	--	**e**	--	**e**
fead	ɛ	i, ɛ[29]	ɛ	ɛ	i	**e**	ɛ	ɛ, ɤ
gread	--	--	--	--	--	--	--	
__s								
easgann	ɛ	**e**	**e** (Br)	ɛ	--	--	--	--
easna	--	--	--	--	--	ɛ	--	--
eas	--	--	--	--	--	**e**	--	ɛ
easbaig	ɛ	--	--	--	--	--	--	ɛ[30]
easbhaidh	--	**e**	--	--	**e**	--	--	--
feasgar	ɛ	**e**	**e**	**e**	--	**e**	**e**	ɛ
leasg	**e**ʃ	**e**s	--	**e**ʃ	--	--	**e**ʃ	ɛs
leasachadh	ɛ	**e**	--	--	--	--	--	**e**
seas-	ɛ	**e**	**e**	**e**	**e**	**e**	ɤ[31]	ɛ
seasg	ɛ	--	**e**	**e**	--	**e**[32]	--	--
teas	ɛ	--	**e**	ɛ	--	--	**e**	ɛ
leas[33]	a	ɛ	--	ɛ	**e**	--	--	**e**
leas[34]	ɛ	--	--	ɛ	--	--	**e**	i, **e**
deas	ɛ	--	**e**	ɛ	--	**e**	**e**	ɛ
greas-	ɤ	--	--	--	--	**e**	--	**e**
treas[35]	--	--	--	--	**e**	**e**	--	**e**, ɛ[36]
teasda	--	--	--	--	--	--	--	ɛ
__θ								
beathadhach	**e**	**e**	**e**	**e**	ɛ	ɛ	ɛ	iə
eathar	ɛ	**e**	--	--	--	--	--	--
leathan	**e**, ɛ	**e**	**e**	ɛ	--	**e**	--	ɛ
__k								
breac[37]	**e**	ɛ	--	ɛ	**e**	**e**	--	ɛ
peacadh	ɛ	ɛ	ɛ	--	**e**	**e**	--	ɛ
leac	--	ɛ	--	--	**e**	**e**	ɛ[38]	ɛ
__p								
ceap	**e**	--	--	--	**e**[39]	--	--	--
__t								
geata	**e**	--	--	--	**e**	ɛ	ɛ	ɛ

---

[28]/e/ E, ɛ B,G.
[29]/i/ Ba, /ɛ/ Ha.
[30]In placename *Both Easbaig*.
[31]*sheasadh*.
[32]*Seasgann*, placename.
[33]In phrase *cha leig/rig thu a leas*.
[34]'garden'.
[35]'third'.
[36]Also *treas* /e/ 'while'.
[37]Adjective and noun.
[38]*leacach*.
[39]*ceapaire*.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
__b								
theab	e, ɤ	e	--	e	--	--	--	ɛ
breab	ɛ	--	--	--	--	--	e[40]	--
__rt								
beartas/ch	a	--	--	--	--	--	e	--
neart	a	ɛ	--	ɛ	ɛ	a	e, ɔ[41]	ɛ, a
__#								
te	ɛ	e	e	ɛ	e	e	--	ɛ

Table 4B.4

Table 4B.4 is analysed in table 4B.5 and chart 4B.3 below. In the first row is given the total number of words in the relevant monograph which illustrates the development //e// > /e/. In the second row is found the total number of returns for the words listed in table 4B.4 from each monograph. The percentage of the occurrence of /a/ in each dialect is given in the final third row.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
Words with /e/	9	22	13	11	17	20	12	10
Total number of returns in table 4B.4	35	28	16	23	21	25	18	32
% of words with /a/	26	79	81	48	81	80	67	31

Table 4B.5

These results are represented in the following chart:

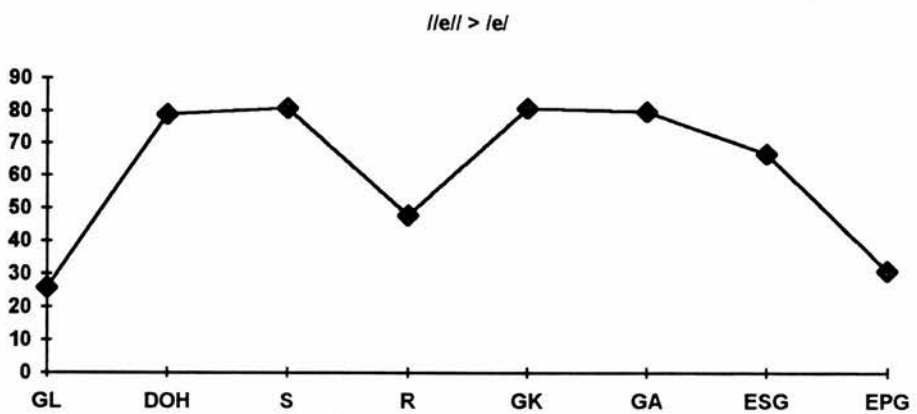

Chart 4B.3

It follows that the development //e// > /e/ is attested to the same or similar extent in the majority of ScG dialects. However, significantly low numbers occur for GL, R and EPG. This suggests that the development //e// > /e/ is less common in some peripheral

[40]But *breabadair* /e/ (E), /ɛ/ (B, G).
[41]/e/ (B, G); /ɔ/ (E).

dialects but consistently more common in central dialects.[42] Our analysis gives the following hierarchical ordering for the occurrence of /e/ for original //e// in the environment C' __ C:

> Skye = Kintyre >> Arran >> Barra >> East Sutherland >> Ross-shire >> East Perthshire >> Leurbost

It is interesting to note that the dialects for which //e// > /e/ is not common are connected in a notional line spreading north westwards from Perthshire, through Wester Ross as far as Lewis. //e// > /e/ appears to be common in dialects to the west and south of this line and also to the east in East Sutherland.

The following table summarises the evidence for the change //e// > /e/ in terms of the following consonantal environment in which it occurs. /e/ indicates that /e/ has been attested for //e// in the given environment. The numbers in the extreme right hand column represent the number of dialects for which the development //e// > /e/ is attested in each of following consonantal environments.

//e// > /e/ by following consonantal environment:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG	
__g	e, ɤ	e	e (ɤ)	e	e	e (ø)	e	e (ɤ)	8
__d	ɛ, a	e (i)	e, ɛ	ɛ (e)	e (i)	e	ɛ (e, ɤ)	ɛ (e, ɤ)	7
__s	ɛ (a, ɤ)	e (ɛ)	e	ɛ, e	e	e (ɛ)	e (ɤ)	ɛ, e	7
__θ	e, ɛ	e	e	e, ɛ	ɛ	ɛ, e	ɛ	ɛ, iə	5
__k	e, ɛ	ɛ	ɛ	ɛ	e	e	ɛ	ɛ	3
__p	e	--	--	--	e	--	--	--	2
__b	e, ɛ, ɤ	e	--	e	--	--	e	ɛ	4
__t	e	--	--	--	e	ɛ	ɛ	ɛ	2
__#	ɛ	e	e	ɛ	e	e	--	ɛ	4

Table 4B.6

Brackets indicate that the form occurs only marginally. The symbol occurring first is the most common reflex of //e// in the environment C' __ C.

[42]With this we may compare the relatively more common lowering of //e// to /a/ in some peripheral dialects, discussed earlier in this section.

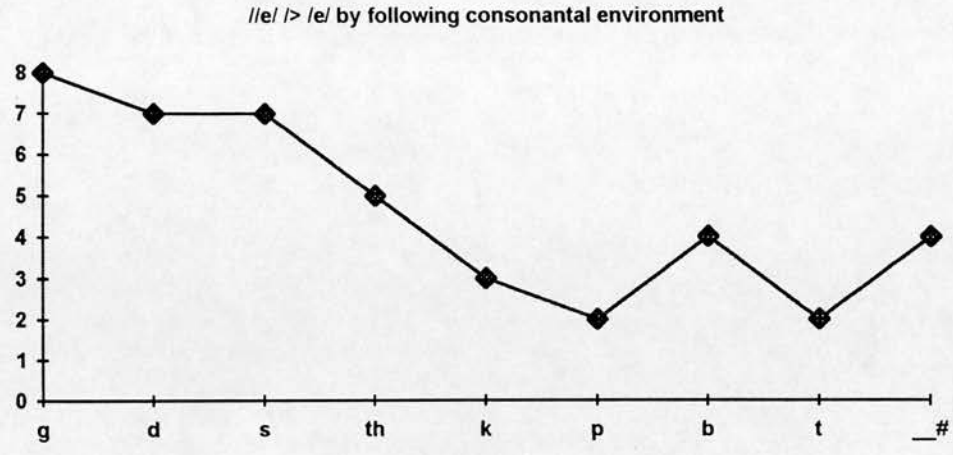

Chart 4B.4

The hierarchical ordering given below emerges for the development //e// > /e/ in terms of the following consonantal environment:

g >> d = s >> h(< //θ//) >> b = __ # >> k >> p = t

It is clear that the most common environments for //e// > /e/ are __ g, d, s although it is significantly common before the segments __ θ, b also. It is difficult to see what distinctive feature these segments share which might explain the development. /g/ is velar whereas /d s/ are non-velarised in ScG. The segments /d s/ (and /θ/) are phonologically [+dental]. Similarly, /g d/ (and /b/) are phonologically [+voice]. Given that the feature [+dental] accounts for /d s/ (and /θ/), it is odd that the development //e// > /e/ does not commonly occur before /t/. It is also worth noting that the change, though common before the velar /g/, is not common before the other velars /k x/. The fact that the development //e// >/e/ is common before /d g/ but appears not to be common before /t k x/ would seem to suggest that the feature of [+voice] of the following consonant was a particularly relevant factor in the development //e// > /e/ in ScG. If so, we might extrapolate from this evidence that the development //e// > /e/ may also have been common before the segments //ɣ ð//. If [+voice] is a significant feature in the development //e// > /e/ as we have suggested, the apparent anomaly of /s/ and /h/ < //θ// as favourable environments also for this development, may perhaps be explained by reference to the fact that these segments have no voiced counterparts in the majority of ScG dialects. This implies that where an opposition existed between [+voice] and [–voice] for a particular point of articulation that the development //e// > /e/ was more likely to have occurred before the segment marked [+voice]. Otherwise, that

is, where this opposition did not exist, the development occurred also.[43] An investigation of the acoustic characteristics of these consonantal segments in Gaelic may shed further light on the development of //e//.

Table 4B.6 also provides the following results with regard to the following consonantal environments for the development //e// > /e/. The numbers in brackets following each dialect refers to the number of different following consonantal environments for which the change is attested: Leurbost (5), Barra (5), Ross-shire (5), Kintyre (5), Arran (5), Skye (4), East Sutherland (4), East Perthshire (3). This reveals that there is little difference between the dialects in terms of the number of following consonantal environments for which the development //e// > /e/ is attested. It provides the following ordering in terms of the number of environments for which //e// > /e/ is attested:

> Leurbost = Barra = Ross-shire = Kintyre = Arran >> Skye = East Sutherland >> East Perthshire

This ordering is significantly different to the ordering arrived at when we considered the overall occurrence of //e// > /e/ in each dialect:

> Skye = Kintyre >> Arran >> Barra >> East Sutherland >> Ross-shire >> East Perthshire >> Leurbost

This suggests a fundamentally different word class membership for the development //e// > /e/ throughout ScG dialects, which is clearly witnessed in table 4B.6 above.

The case for ScG /ɛ/, /e/ representing the mid value of original //e//

We must now consider briefly the possibility that original //e// may have been lowered to /a/ in some cases and secondarily raised to /ɛ/ or /e/. It has generally been assumed that the majority of instances of /ɛ/ and particularly /e/ in ScG as reflexes of original //e// do not reflect secondary raisings of /a/, previously lowered from //e//. This is clear form statements like the following:

> The Old Irish orthographic representation of this vowel was as *e*, which appears to have indicated a type of low-mid front short vowel of [ɛ]-like quality, a realisation still found in most dialects of Scottish Gaelic. (Ó Dochartaigh 1987: 75)

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[43]For other possible explanations for the development //e// > /e/ bfore /d s θ/ but not /t/, see our discussion of the Irish evidence in section A above.

This is certainly the most logical conclusion and certainly the most economical which explains satisfactorily the incidence of /e/ and /ɛ/ (from //e//) in modern ScG. Furthermore, the raising of //a// is only widely attested in ScG in the prepalatal environment. Before non-palatals, however, the raising of //a// is not commonly attested. It occurs in some dialects (R, GK) in nasal environments. In GA it is common before the apicals /s r n/, see chapter 3 above. Let us now consider some reflexes of original //a// and //e// in GA before these segments:

	Original //e//	**Original //a//**
__ s	*easna* /ɛ/	*casar, lasar* /ɛ/
__ r	*fear, cearc* /ɛ/	*aran, carach* /ɛ/
__ n	*bean* /ɛ/	*Tana* /ɛ/
	(Examples from GA)	

In the case of GA based on the evidence of //a// > /ɛ/ / __ C, we cannot be certain whether or not /ɛ/ which occurs as a reflex of //e// in the above examples represents the original pronunciation or a secondary raising of /a/. It is only in dialects such as GA where the development //a// > /ɛ/ is attested before nonpalatals that there is some doubt with regard to the interpretation of /ɛ/ < //e// before nonpalatals. For the majority of ScG dialects, however, there is little corroborative evidence for the secondary raising of /a/ preceding non-palatals. We conclude therefore, with the possible (but by no means certain) exception of GA that instances of /ɛ/, /e/ from original //e// do not reflect secondary raisings of an intermediate /a/.

//e// > /i/ / C' __ C

The following table illustrates the devlopment //e// > /i/:

//e// > /i/

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
C' __ C								
meas[44]	--	**i**	--	--	--	**i**	**i**[45]	ɛ
meas(an)[46]	**i**	**i**	--	**i**	--	**i**	--	--
measa[47]	**i**	**i**	**i**	**i**	**i**	**i**	ɤ	ɛ
(am) measg	--	**i**	--	**i**	**i**	--	ɤ	ɛ
measgachadh	**i**	**i**	--	--	--	--	--	--
meanach	**i**	--	--	**i**	--	--	--	ɛ
mearachd	ɛ	--	--	--	--	--	--	--
meanbh	ɛ̃	ɛ	--	--	--	--	ɛr	ɛ
meadhan	ĩ	**i**	**ia**	**i**	ɛ	ɛ	e:	**ia**
nead	ɛ	**i**, ɛ	ɛ	ɛ	**i**	e	ɛ	ɛ, ɤ
ceangal	**i**	ɛ̃	ã	ã	ɛ	a	ãũ, õ	ãu
leas[48]	ɛ	--	--	ɛ	--	--	e	**i**, e

Table 4B.7

It follows from the above table that the raising of //e// to /i/ has been most common in nasal environments, particularly when //e// was preceded by the nasal labial //m'//. Cf. the raising to /i/ in the prepalatal environment discussed below. It is particularly common in the environment m' __ s. We have already noted that there is a tendency for high front vowels to occur before /s/ in ScG (cf. //e// > /e/ / __ s discussed earlier). The preponderance of the raising to /i/ following //m'// may be further evidence for the palatality of this segment in earlier stages of the language, the loss of the palatal feature being transferred to the following vowel, thus having the effect of raising //e// (already tense before /s/)[49] to /i/. Raising to /i/ appears to be less common in the eastern peripheral dialects of ESG and EPG. The occurrence of /i/ in some words may be based on an oblique form, e.g. *nid* (G), *lis* (G), *liosa* (acc pl) (see DIL s.v. *net, les*).

//e// > /ɤ/ / C' __ C

The following table illustrates the development //e// > /ɤ/:

---

[44]'respect, esteem'.
[45]*measail*.
[46]'fruit'.
[47]Comparative/superlative of *dona*.
[48]'garden'.
[49]Note the common occurrence of /e/ before /s/ in ScG, see appendix 2, section B.

//e// > /ɤ/: ScG

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
__g								
freagairt	ɤ	e	ɤ[50]	--	e	e	e	e
creag	ɤ	e	--	--	e	e, ø	e	--
teagamh	ɤ	--	e	e	--	e	--	ɛ
teagasg	ɤ	e	--	e	--	--	--	--
beag	e	e	e	e	e	e	e	e, ɤ
eaglais	e, ɤ	e	--	--	e	e	--	e
__d								
nead	ɛ	i, ɛ[51]	ɛ	ɛ	i	e	ɛ	ɤ, ɛ
eadar	a	e	--	e	e	--	ɤ	ɛ
__s								
fleasg	--	--	--	--	--	--	ɤ, a[52]	ɛ[53]
measg	--	i	--	i	i	--	ɤ	ɛ
greas	ɤ	--	--	--	--	e	--	e
__b								
theab	e, ɤ	e	--	e	--	--	--	ɛ
__n								
seanchas	ɤ	ɛ	--	--	--	--	--	--
seann-	ɤ(:)	ɛu	au	--	--	--	ũ:	--

Table 4B.8

The development //e// > /ɤ/ is particularly common in GL and in ESG. In GL the development is common before the velar stop /g/; in ESG, it is common before the cluster /sg/. We may compare the retraction of //e// to /ɤ/ which is particularly common before /g/ with the development //e// > /ɤ(:)/ before //ð/ɣ// discussed below.[54] In GL the development occurs frequently following Cr' clusters, e.g. *freagairt, creag, greas*. Cf. EPG /ɤ/ *dream*, ESG /ɤ/ *fleasg*, /e/~/ø/ *creag* GA. Variation between /e/ and /ɤ/ is common (e.g. in GL before /g/, /b/; in EPG in *nead, beag*; compare /e/~/ø/ in *creag* GA). The occurrence of /ɤ/ for //e// in a svarabhakti syllable in GL *seanchas* is noteworthy. Cf. //a// > /ɤ/, chapter 3.

Other minor developments in the environment C' __ C

Another significant development is the rounding of //e// to /o/ before //L// in the dialects of Ross-shire, East Sutherland and East Perthshire and also the rounding of //e// to /ɔ/ before //N// in the latter two dialects.[55] See table 4B.1 above. Although it would be tempting to argue that the change //e// > /o/ is a simple case of retraction

---

[50]AV, Km.
[51]/i/ Ba, /ɛ/ Ha.
[52]/ɤ/ E, /a/ B,G.
[53]*fleasgach*.
[54]Recall that /e/ is retracted ([ë]) before /g/ and /ɣ/ in Ross-shire dialects.
[55]An intrusive /r/ has developed in the words *beannachd, ceannach* in East Sutherland.

and rounding of original //e//, this appears to be unlikely in light of the parallel development of //a// which is raised and rounded in the same environments in these dialects. See the discussion of the developments //a// > /o/, /ɔ/ in ESG and EPG before //L// and //N//,[56] chapter 3 above. In the light of this evidence we can infer that the development //e// > /o/, /ɔ/ is likely to have had the intermediate devlopment //e// > /a/ with subsequent raising and rounding to /o/, /ɔ/. The rounding in such instances may be attributed to the velarised nature of original //L N//.

Significant minor developments in the environment C' __ C'

The minor developments //e// > /i/, /ɤ/, /ɛ/ in the environment C' __ C' are common to most dialects and will be dealt with first.

//e// > /i/

The following table illustrates the development //e// > /i/ in the prepalatal environment.

//e// > /i/: ScG

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
C' __ C'								
meinic	i	--	--	--	--	--	--	--
meise	ĩ	--	--	--	i	i	i	i
meisneach	--	--	--	--	--	--	--	i
(ar) mheisg(e)	--	--	ĩ	--	--	--	ĩ	ĩ
meirg	e	e	e	e	--	--	--	e
smeig	ɛg[57]	--	--	--	--	--	ig[58]	ig'
teine	ã	i[59]	i	i	e	e	i	e
teinn	ei	--	ei, əi	i:	i(:)	--	ĩ:	i
teinneas	i	--	--	--	i	--	i	--
sgein/ean-	i	--	en	in	--	--	ɤ	--
*eidir	i	--	--	--	[i]	--	i	id
deilg-	i[60]	--	--	--	--	e[61]	--	--
teilg	i	i	--	--	[i]	--	i	i
deirg(e)	--	--	--	--	i	--	--	--
*leig	i	i	i	eg	e, i	e, i	e	e~i

Table 4B.9

---

[56]Although apparently not in ESG before //N//.

[57]*smeagad*.

[58]Dorian transcribes this phonologically as /smig/. In her phonetic description of the stops, she says: 'Word-finally /k^h, g/ often but not always have markedly palatal articulation after front vowels.' ESG: 42.

[59]See DOH: 240, no. 55. /e/ in SU.

[60]*deilgneach*.

[61]'stocking wire'.

It is clear from the above table that the raising of //e// preceding palatals is most common in nasal environments, particularly following /m/ but also before /N' n'/; it occurs frequently in the environments m' __ ʃ, m' __ n', t' __ N', n'. These environments suggest that the following consonant was also a factor in the raising of //e// to /i/. In most cases, the following consonant may be described as [+front], i.e. is articulated in the front part of the mouth. The frequent raising of //e// to /i/ in the environment m' __ ʃ and t' __ N',n' suggests that a nasal environment, where //e// was either preceded or followed by a voiceless consonant, was a favourable environment for the raising.

Raising, however, also occurs in non-nasal environments. It is frequent in svarabhakti syllables before the cluster /l'g'/. We may compare /i/ in GK before /r'g'/ in the oblique form *deirg*. It is worth noting that raising does not take place in all words which contain favourable phonological environments for the raising of //e//. For instance *meirg* has initial /m/ and also contains a svarabhakti syllable. However, despite this, raising is not attested in the monographs in this word. This suggests that while phonological conditioning was the motivating factor for the raising of //e// to /i/, lexical conditioning also played its role.

//e// > /ɤ/

The following table illustrates the development of //e// > /ɤ/ / C' __ C'

//e// > /ɤ/: ScG

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
creid(sinn)	ɤ	ɤ, e[62]	ɤ ,e[63]	--	e, ø	ø[64]	ɤ, e[65]	ɤ
creideamh	--	--	--	e	e, ø	--	--	ɤ
bleidire	ɤ	--	--	--	--	--	--	--
treis	trɤ	--	--	--	--	--	--	es
deilbh	ɤ	--	--	--	--	--	--	--
*sgeine(an)	i	--	en	in	--	--	ɤ	--

Table 4B.10

It is clear from the above table that the development //e// > /ɤ/ / C' __ C' is most common before the palatalised coronals /d' ʃ l' n'/ particularly following the clusters Cr', Cl'.[66] We noted earlier the tendency for //e// to be retracted following Cr' and Cl'

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[62]/ɤ/ Ba; /e/ Ha.
[63]/ɤ/ AV, Km; /e/ Br.
[64]Presumably also /e/.
[65]/ɤ/ G, E; /e/ B, E.
[66]Notably following broad /tr/ in GL *treis*, but cf. GL /kr'/ in *creidsinn*.

clusters in the environment C' __ C e.g, *greas, freagairt, creag, fleasg*. The retraction of //e// in the palatal environment C' __ C' may be seen as a case of dissimilation of front quality in the sequence //C'eC'//.

//e// > /ɛ/ / C' __ C'

The following table illustrates the development of //e// > /ɛ/ before palatals in ScG.

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
ceithir	e	--	e	e	e	e	e:	ɛ
breith	ɛ[67]	e	--	--	e	e	--	ɛ
bleith	ɛ	--	--	ɛ	--	--	--	ɛi
feitheamh	e	e	--	ɛ	--	e	--	ɛu
creithleag	--	--	--	--	e[68]	--	ɛ	--
leitheid	ɛ~e	e	--	--	e	-	ɛ	ɛə
reithe	--	ɛ	ɛ	ɛ	e	--	--	ɛə
creic	e	e	e	ɛ	--	e	ɛ	e
ceirtle	--	ɛ	--	ɛ	--	a	--	--

Table 4B.11

The low mid vowel /ɛ/ occurs for expected /e/ particularly before original //θ'// in some dialects. It is especially common following /R/ < //R'// in the word *reithe*. Sporadic instances of /ɛ/ occur in the word *creic* where we might expect /e/ to be the regular development. It is perhaps relevant in the case of ESG that the *r* in the initial group *cr-* is not palatalised. This is not, however, the case in Ross-shire where /r'/ occurs. Reflexes of the word *ceirtle* apparently do not include /e/ realisations, where *-r-* is usually realised as /R/.

Other minor developments in the environment C' __C'

We note /ã/ for *teine* in Leurbost but /ẽ/ for *theine* which may imply that the lowering of //e// to /a/ occurred as a result of differentiation in the (high) front quality of the three segments /t'/, /ɛ/, /n(')/. We may also note the diphthongisation of //e// before /x'/ in ESG in the word *deich*. The irregular development //e// > /iə/ in *beathadhach* should also be noted in EPG.

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[67]But /e/ Borgstrom DOH.

[68]*creithire* 'gnat'.

__ F[+voice] [+labial]

The development of //e// before //v, ṽ// and //v' ṽ'// is summarised in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
ebhV	ɔ	eɔ	ɔ	ɛɔ	o	o	o:	ɛu#, ɛwV
ebhC	ɔ:	--	--	--	o:	--	--	--
emhV	ɛ̃v	--	ɛ̃ũ	ɛ̃ũ	--	ɛv	ãũ	--
emhC	ãũ	ɛ̃ũ	ɛ̃ũ	ɛ̃ũ	ɛv	av	ãũ:	a·u
eibh	--	--	--	--	--	--	--	--
eimhV	ɛ̃	ɛ̃ũ(Ha)[69]	--	--	--	(ɛw)?	--	ɛ̃i

Table 4B.12

Relatively few instances of original //ev(')// and //eṽ(')// occur in the monographs and there are many gaps in attestation, particularly for //ev'//, //eṽ'// and preconsonantal //ev//. It is clear that //ev// and //eṽ// sequences have developed along different lines in all ScG dialects. There appears to be a slight difference in development of //ev// sequences between north western dialects (GL, DOH, S, R) and more southern dialects (GK, GA, ESG, EPG). In northern dialects the development of prevocalic //ev// has been /ɔ/ or /ɔ/-gliding diphthongs; in southern dialects, the development has been /o(:)/ or *u*-gliding diphthongs. Although there is insufficient evidence to prove it conclusively from the monographs, /ɔ:/ appears to be the normal development of preconsonantal //ev// in northern dialects and /o:/ in southern dialects. It is significant that diphthongal realisations only occur in synchronic disyllabic forms, i.e. in reflexes of prevocalic //ev// sequences. This suggests that the original development in //evV// sequences may have been the development of *u*- or *o*-gliding diphthongs. If we use the symbols E, O , U to represent vowels in the range [ɛ] to [e], and [ɔ] to [o], and [ọ] to [u] repectively, the development of //evV// sequences may be described as follows:

//ev// = /Ev/ > /Ew/ > (/EU/ >) /EO/ > /jO/ > /O/
> /ᴱO/ > /O/

The vocalisation of //v// led to the development of a labial glide /w/ and/or a *u*-gliding diphthong. Assimilation between the first front element /E/ and the following back element /w/ or /U/, led to the lowering of /Ew/ (or /EU/) to /EO/ with subsequent dissimilation causing /E/ to be raised to /j/. This development suggests a shift of vocalic nucleus from the first to the second element. The interpretation of the glides

[69] *Deimheas* is the only evidence for this listed in DOH.

/j/, /ᴱ/ as off-glides from the preceding palatal consonant would have given further impetus for the smoothing of /EO/ to /O/. That /O/-gliding diphthongs preceded the development of /ɔ:/ and /o:/ in //evC// sequences seems quite likely. Our explanation of the synchronic forms argues that the development //e// > /ɔ/, /o/ was not a straightforward case of retraction and rounding but involved the development of *u*-glides which subsequently achieved vocalic status; original //e// itself was devocalised and became an on-glide which subsequently merged with the preceding palatal consonant. A comparison of the development of //ev// and //av// shows that //e// is unlikely to have been lowered to /a/ before the period of vocalisation of //v// in ScG, see table 4B.12 above and table 4B.13 below:

	GL	**DOH**	**Skye**	**Ross**	**GK**	**GA**	**ESG**	**EPG**
abhV	o, ?	o, au	o, [a-u]	[o-u], [ɔ-u]	o, av	o, av	o(:) ~ əu:	ɔu
abhC	o:, ?	--	--	--	--	--	o:~əu:	a·u
amh#	ãv	ãv	--	ɛ̃v	--	ãṽ	ãũ	ãw
amhV	ãv	ãv(Ha)~ ãũ (Ba)	ãw~ãũ ~a	ãũ	ɛv	av	--	ãũ
amħC	ãũ	ãũ	ãũ	ãũ	ɛv	ãṽ	ãũ:	ã·ũ

Table 4B.13

Some interesting differences in the development of //ev// and //av// emerge from a comparison of both tables, although these differences may reflect the limited nature of the corpus rather than any real difference in development. *U*-gliding diphthongs occur for //av// but apparently not for //ev//. Similarly //v// is retained in some instances in //av// sequences in GK, GA but not apparently in //ev// sequences.

We have already noted that original //eṽ// has not developed along the lines of //ev//. The main developments of //eṽ// have been /ɛ̃v/ or /ɛ̃ũ/. The fricative is retained more frequently in GK and GA than other dialects; in GL it is retained prevocalically but not preconsonantally. This implies that //ṽ// may have been vocalised preconsonantally earlier than prevocalically. The divergent development of //ev// and //eṽ// sequences suggest that //v// was vocalised earlier than //ṽ//. It is interesting to speculate that the current reflexes of //eṽ// reflect the earlier stages in the development of //ev//. We may note that there are no appreciable differences in the development of //eṽ// prevocalically and preconsonantally.

/ɛ̃/ appears to have been lowered before /ũ/ (< //ṽ//) in some dialects, e.g. GL, GA, ESG, EPG. Instances include *geamhradh; teamhair, reamhair*. Indeed /ãv/, /ã(ũ)/ is

the regular realisation of *reamhair* in most dialects in which case the lowering of //e// has been affected by the change //R'// > /R/.[70] I take *geamhradh* to be a *bona fide* instance of 'original' //e//.[71]

Significant minor developments

We have already alluded to the development //e// > /ã/ in *reamhar*. Ross-shire has a comparative/superlative form of *reamhar*, /Rĭũ-ə/, which Borgstrøm derives from OIr **rimu*, 'which has the regular raising of [original] *e* to *i* before *u*' (SR: 82) and as such does not reflect //e// for our purposes. The other significant minor development has been //e// > /ɔ/ GK, /ɔ̃/ GA in the word *meamhair* which resembles the development of //ev// in these dialects which is normally /o/. *Meamhair* is a borrowing from Latin *memoria* which is attested in the Old Irish glosses as *mebuir*, see DIL s.v. *mebair*. In Middle Irish sources it is attested as both *mebor* and *memor* (ibid). These spellings and the GA form suggest that dissimilation occurred between the nasals /m'/ and /ṽ/ at an earlier stage of the language in this word in some dialects at least.[72] We may compare Donegal /õ:/ in *meabhair* which reflects the development of //ev// rather than //eṽ//.

//e// / __ //v'//, //ṽ'//

There is insufficient evidence in the monographs to illustrate satisfactorily the devlopment of //ev'// and //eṽ'// in ScG dialects. What evidence exists points towards /ẽ/ being the normal development of //eṽ'//. The word *deimheas* is realised as /ẽũ/ in Harris and as /ɛw/, /əw/ in GA. Holmer notes that the GA forms hardly reflect 'the genuine Arran pronunciation', presumably because of the 'rare' semivowel [w] (see GA: 12) for an expected /v/, see below. Other realisations of *deimheas*, gleaned from LASID IV: 190, no. 27, are:

Arran	[d'eviʃ]	Benbecula	[d'eṽiʃ]
Kintyre	--	Lewis	[d'ãṽiʃ]
Mid-Argyll	[d'eu:s]	Wester Ross	[d'ẽ.əʃ]
		Sutherland	[d'ɛṽəʃ]

[70]Cf. *rech* > *rach* future/conditional stem of 'go' in Irish and ScG.

[71]*Geamhradh* derives from *ga(i)mh+radh*. The early raising of //a// before //ṽ// or //ṽ'// gave rise to an initial [g'] before the phonemicisation of initial palatalised consonants.

[72]There are numerous examples of this dissimilation e.g. reduplicated future forms of *maidid, mem-~meb-*, see DIL s.v. *maidid; maidm~maidb* DIL s.v. *maidm*.

These forms indicate that //ṽ'// had lost its palatality in this word before it was vocalised. The modern forms imply the development //eṽ'// > /eṽ/ > /ev/.[73]

__ F[+voice] [+dental]\[+velar]

The normal developments of //eð/ɣ// and //eð'/ɣ'// in ScG are summarised in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
edh#, egh#	ɤɣ	eɣ#, o:+	--	eɣ#	e~ø(ɣ)	e~ø	ɤ	ɤ
edhV, eghV	ɤ	eo(B), o(B) ɤɣ(H), ɤ(H)	ɤ	e	e~ø	e~ø	əu	əə
edhC, eghC	--	--	ɤɣ	e:, eɤ:	e:(~ø:?)	ø:(~e:?)	ɤ:	ɤ:
eidhV, eighV	ɤ	e	??	??	e	--	əi#	eə
eidhm	e:	e:	e:	e:	e:	e:	e:	e:

Table 4B.13

Final /ɣ/ < //ð/ɣ// has been retained in stressed word final position in many dialects e.g. GL, Harris, R. It has more rarely been retained intervocalically, e.g. Harris. The most common reflex of //e// before word final and prevocalic //ð/ɣ// is clearly /ɤ/ and retracted varieties of /e/; in GK and GA rounded /ø/ occurs which corresponds to the phoneme /ɤ/ in other varieties of ScG. It follows, therefore, that the main development of //e// in this environment has been retraction to [ë] = /e/ or /ɤ/. We may compare a similar development before the velar stop /g/ in some ScG dialects. Before preconsonantal //ð/ɣ// original //e// has most frequently yielded /ɤ:/, /e:/ (and /ø:/ in GK, GA). However, the available evidence from the monographs shows that the development of //eð/ɣ// has been decidedly heterogeneous as the following table illustrates:

[73]The *u*-gliding diphthongal forms provide further evidence for the derivation of the future form /jo/ 'will get, find' from the historic present root *gheibh* in ScG.

//eð/ɣ//

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
feadh	ɤɣ	ɤɣ	--	--	e~ø	e~ø(g)	ɤ	ɛw~əw
feadhain	ɤɣ	eo	eo	eɣ, ɤɣ	e~ø	e~ø	əu	ɛi
deaghaidh	--	o	--	--	--	e~ø	--	əi
deagh-	e:	o: (ɤ:Ha)	--	--	e:~ø:	--	--	--
meadhan	ĩ	i	ia	i	ɛ	ɛ̃	ɛ̃:	ia
meadhg	ɤɣg[74]	iu:~ɤŋg[75]	eu:, ɛŋ	e:, eɤ:	--	--	ɤŋ	ɤ:
teaghlach	--	--	ɤɣ	e:, eɤ:	e:r	ø:[76]	ɤ:r	ɤ:
teadhair	ɤɣ	ɔu	--	--	--	--	--	əə
breaghdha	ia	ia	--	--	--	a:	--	i·a
bleaghan	ɔ	ɔ	ɔ	--	o	o	o:, əu	ɔu, ɛu

Table 4B.14

Leaving aside the normal developments /e(:)/, /ɤ(:)/, /ø(:)/ which we have discussed above, these lexical items provide evidence for a number of other developments of //eð/ɣ// in ScG, which may be classified as follows:

monophthongs: /o/ (rarely /ɔ/), /o:/
u-gliding diphthongs: /iu:/, /eu:/, /əu/, /ɔu/, /ɛu/ (/ɛw/~ /əw/)
o-gliding diphthongs: /eo/ (following labial /f/ only?)
ɤ-gliding diphthongs: /eɤ:/ (R only?)

Leaving aside *bleaghan* and *breaghdha* which have exceptional developments, the lexical distribution of each type may be set out as follows:

/o/ *deaghaidh* (DOH)
/o:/ *deagh-* (Ba)
/iu:/ *meadhg* (DOH)
/eu:/ *meadhg* (S)
/əu/ *feadhain* (ESG)
/ɔu/ *teadhair* (DOH)
/eo/ *feadhain* (DOH)
/eɤ:/ *meadhg*, *teaghlach* (R)

Classifying these according to prevocalic and preconsonantal //eð/ɣ//, we have:

[74]See DOH: 241, no. 69.
[75]/ɤŋg/ Ha, see DOH: 241, no. 69.
[76]Also /e:/?

//eð/ɣV//
/o/ *deaghaidh* (Ha), /əu/ *feadhain* (ESG), /eo/ *feadhain* (DOH), /ɔu/ *teadhair* (DOH)

//eð/ɣC//
/o:/ *deagh-* (Ba), /iu:/ *meadhg* (DOH), /eu:/ *meadhg* (S), /eɤ:/ *meadhg, teaghlach* (R)

The main difference in the development, as we have noted earlier, of prevocalic and preconsonantal //eð/ɣ// is that short vowels and diphthongs have developed in the former and long vowels and diphthongs have developed in the latter. I claim that all reflexes of //eð/ɣ//, with the possible exception of /e(:)/, may be derived from /EW(:)/ where /W/ represents *u*- and *ɯ*-glides as follows:

//eð/ɣ// > /Eɣ/ > /EW(:)/ > (1) /EU(:)/
> (2) /EU(:)/ > /EO(:)/
> (3) /EU(:)/ > /EO(:)/ > /O(:)/[77]
> (4) /EU(:)/ > /EO(:)/ > /ɸ(:)/
> (5) /EU(:)/ > /IU(:)/
> (6) /Eɤ(:)/
> (7) /Eɤ(:)/ > /ɤ(:)/
> (8) /Eɤ(:)/ > /ɸ(:)/

Each of the developments /EW(:)/ > /EO(:)/, /Eɤ(:)/, and /EU(:)/ > /IU(:)/, and /EU/ > /ɔu/ *teadhair* (DOH) involve different types of assimilations between first and second elements in features of height. In the case of /EW(:)/ > /EO(:)/, /Eɤ(:)/, the second element /U(:)/ has been lowered, thus assimilating to the height of /E/. In the case of /EU(:)/ > /IU(:)/, it is the first element which has been raised thus assimilating to the second element /U(:)/. Similarly, it is the first element which has assimilated to the second element in *teadhair* (DOH) /EU/ > /ɔu/; in this case the first element has assimilated to the roundness of the second. Alternatively, the development //eð// > /iu:/ as witnessed in *meadhg* (DOH) may be explained as a result of the raising of //e// to /i/ following the labial nasal //m'// which is a favourable environment for the raising of //e// to /i/.[78]

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[77]The development /EO(:)/ > /O(:)/ may be explained either as (a) /EO(:)/ > /jO(:)/ > /O(:)/ with the raising of /E/ to /I/ or /j/ and the subsequent interpretation of /j/ as an off-glide from the preceding palatal consonant; or as (b) /EO(:)/ > /^{E}O(:)/ > /O(:)/ with the subsequent interpretation of /^{E}/ as an off-glide from the preceding palatal consonant. In any case both explanations involve a shift in nucleus stress from the first to the second element.

[78]Cf. the various /i/ realisations of *meadhan* in ScG, table 4B.14 above.

Rather than assuming that //e// was rounded to /o/ with the vocalisation of /ɣ/, our explanation suggests the development //e// > /o(:)/ (in this class) is better explained as deriving from an intermediate diphthongal realisation such as /EO(:)/.

The development //eð/ɣ// > /e(:)/, although it is possible to derive it from /EW(:)/ is more likely to derive from forms where the fricative /ɣ/ was vocalised without affecting the preceding vowel. We may compare the loss of the labial fricative in some dialects in words like *abhainn* /a-iN'/.

It is interesting to note that the modern reflexes of *meadhg* and *teaghlach* show no traces of the development of svarabhakti before the clusters //ðg// and //ɣl//. This may be illustrated by considering the reflexes of *meadhg* in ScG dialects:

	GL	DOH	Skye	Ross	GK	GA	ESG	EPG
meadhg[79]	ɤɣg[80]	iu:~ɤŋg[81]	eu:, ɛŋ	e:, eɤ:	--	--	ɤŋ	ɤ:

Table 4B.15

The Lewis form /mjɤɣg/ (DOH: 241, no. 69) and the forms /mjɤŋg/ (Harris, ESG), /mɛŋg/ (Skye, North Uist) clearly show no traces of a svarabhakti vowel. It could be argued, however, that /iu:/ and /eɤ:/ derive from //m[EɣE]g// with reduction of the disyllabic svarabhakti sequence following the vocalisation of /ɣ/. It may be significant that svarabhakti syllables must have a consonantal interlude in ScG.[82] If svarabhakti had developed in *meadhg*, the vocalisation of /ɣ/ would have led to the loss of the consonantal interlude, and subsequently to the loss of the svarabhakti syllable. However, the Lewis, Harris, ESG, North Uist forms quoted above would seem to argue against the development of svarabhakti in *meadhg* in ScG. Greene (1952: 213), misguidingly quoting Borgstrøm as 'incorrect', notes that the lengthening or diphthongisation which occurs before voiced spirants, as witnessed in *Tadhg* for example, 'is really a special case of svarabhakti'. Borgstrøm's original statement to which Greene refers concerned both Irish and ScG dialects. We may conclude from Greene's statement that he considered svarabhakti to have developed in ScG in the cluster //ðg//. We have seen that the synchronic ScG evidence does not seem to

[79]See also DOH: 241, no. 69.
[80]See DOH: 241, no. 69.
[81]/ɤŋg/ Ha, see DOH: 241, no. 69.
[82]I know of no examples from ScG of svarabhakti syllables which do not contain a consonantal interlude, i.e. [V-V].

support this.[83] This in turn implies that the environments for the development of svarabhakti in Irish and ScG were different in some respects.

Breaghdha

The reflex of //e// in the word *breaghdha* is in most ScG dialects /ia/ (/i·a/ EPG), but /a:/ in Arran as in Irish dialects. The GA development would seem to imply that //e// was lowered to /a/ before the vocalisation of //ɣ//, unless it represents a smoothing of /ia/ to /a:/.[84] We have already noted above that lowering of //e// to /a/ is fairly widespread in GA dialects. In northern and western dialects it would appear that //e// was lengthened by compensatory lengthening following the vocalisation of //ɣ//. In northern and western dialects the breaking of //e:// to /ia/ is well attested (see Jackson 1968) and must have applied to /e:/ in *breaghdha*. Since the breaking of /e:/ seems to occur in open syllables in ScG (e.g. *sé* > *sia* 'six', but see Ó Murchú 1989a: 144), it is unclear if long *é* was diphthongised before or after the vocalisation of /ɣ/ in *breaghdha*.[85] We have already noted that lengthening of //e// is common before preconsonantal //ð/ɣ// in some ScG dialects. The development of *breaghdha* may be summarised as follows:

//eɣ// > /Eɣ/ > /E:/ > /ia/

I am not aware of any other instance of the breaking of /e:/ which derives from the sequence //eð/ɣ//. Cf. /e:/ *teaghlach, meadhg* (R). The unique development of *breaghdha* may imply that the reduction of original *gh* //ɣ// in the position before //ð// in this word may have occurred before the general vocalisation of //ɣ// had taken place. If correct, this implies the following tentative chronological ordering for ScG:

(1) //ð// > /ɣ/
(2) *breaghdha* > /br'e:ɣə/
(3) /e:/ > /ia/ / C' __ C

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[83]We have argued in chapter 3 that Greene's statement holds true for certain Irish dialects only.
[84]However, I am not aware of any other such instances of smoothing in GA dialects.
[85]The exceptional development of *Séaghdha* /e:/ in Munster dialects, which Ó Murchú (1989a: 144) refers to, is easily explained if we accept the validity of rule 3A (see chapter 3, section A) for the development of the velar approximant /ɯ/ (< /ɣ/) following front vowels, in which case /ʃe:ɣə/ would have developed as follows: //ʃe:ɣə// > /ʃe:ɯə/ > /ʃe:jə/. The subsequent development parallels that of *léigheann* /e:/ as expected.

Bleaghan

Reflexes of the word *bleaghan* are normally /ɔ/ or /o/ in ScG dialects. The occurrence of /o/ and /eo/ (Glengarry dialect as described by Dieckhoff (1932: 20), s.v. *bleaghainn*) may be explained as discussed above for //eɣ// sequences generally. It is possible that /ɔ/ represents a lowering of /o/. However, the development /ɔ/ occurs uniquely in this word in some dialects (e.g. GL) which seems to suggest that it may have a different derivation. It is possible to derive /ɔ/ from *bleoghan*, see DIL s.v. *blegon* which occurs in the *Irish Grammatical Tracts*. On the other hand, *bleoghan* may represent a development of *bleaghan* as outlined above for //e// > /(E)O/.[86]

//e// __ //ð', ɣ'//

The evidence for the development of //e// / __ ð'/ɣ' is very sparse indeed. The available evidence would seem to suggest, however, that /ɤ/ and /e/ are the normal developments. The only instance which I have succeeded in tracing in the monographs which would illustrate the development //eð'/ɣ'C// is *feidhm(eamhail)* (normally spelt *feum(ail)* in ScG). This has invariably yielded /e:/ in ScG dialects. It is interesting to note that this /e:/ has not broken to /ia/ in any dialects so far as I am aware.[87] However, /eo:/ has developed in some dialects in *feidhmeamhail* although /e:/ appears in *feum* in such dialects, e.g. Barra and North Uist. This may imply that /eo:/ is to be derived from an original *feadhmamhail*[88] rather than *feidhmeamhail* as /eo:/ appears to be the expected development of //eɣ//. Compare *feadhain* in Barra, North Uist.

__ SON#\+C[+hom]

Before //R// and rC[+voice] the general development has been /a:/ or /ɛ:/ although /ɔ:/ occurs in ESG. Lengthening to /ɛ:/ in Barra, Skye and Ross-shire implies that //e// had not been lowered before the process of lengthening began in these dialects. The retention of a mid vowel before //R// in these dialects has been discussed above. The development //e// > /ɔ:/ in ESG might suggest that //e// was lowered to /a/ and

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[86]Alternatively, the roundness of the stressed vowel may have been affected by the roundness of the stressed vowel *o* in *blegon* by a process of vowel harmony.

[87]This may support the claim of the existence of phonemic palatalised labials in an earlier stage of ScG as breaking would not be expected before a historically palatalised consonant, in this case //m'//.

[88]Compare Irish *feadhmannta* = *feumail*.

subsequently raised to /ɔ/ before the process of lengthening had begun in this dialect. Recall that both //a// and //e// have yielded /ɔ/ regularly before the sonorants //R N L//. Some instances of /ɛ:/ < //e// may conceivably represent a secondary raising of a lengthened /a:/.

Diphthongisation to /au/, /ɛu/ has developed before //L N M// in western and northern dialects. Original //e// has been lowered to /a/ without lengthening in GK, GA and EPG dialects. In EPG and also in ESG, //e// has developed to /o/ before //L//. The development //e// > /əu:/ / __ L in ESG may imply the development //e// > /o/ > /əu:/. Compare /o/ in *sealladh* (ESG). The development //e// > /o/ does not imply that //e// was not lowered to /a/ before //L//, however, since //a// was also raised to /o/ and /ɔ/ before //L//. See chapter 3. The development in ESG and EPG can be described as follows:

//eL// = [ɛL] > [aL] > [ɔL] > [oL]

Before the palatals //L' N' M'//, dipthongisation to /ei/, /əi/ occurs in most western and northern dialects although lengthening does occur in some Ross-shire dialects.[89] The peripheral dialects of GA, GK and EPG do not usually lengthen original //e// before the long sonorants.[90] GA and GK retain /e/ before /N'/ while EPG has raised //e// to /i/ in this environment.

Minor

In the word *ceird* 'trade', /ɯ:/~/i:/ has developed in Kintyre. This may imply raising of //e// to /i/ before lengthening.

Lengthening does not occur in EPG dialects in the words *fearna, feairt*.

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[89]Although in Red Point 'a slightly diphthongized sound, beginning as an open *i* (ɪ) which becomes closed before the end: *t'ɪ:iN'* "sick" M. Ir. tinn' (SR: 72).

[90]But cf. /ɛi/ in *greim* EPG.

Section C
A Comparison of the Development of //e// in Irish and ScG

Original //e// has been retained in Irish and ScG dialects most commonly in the prepalatal position. ScG has been more conservative than Irish, and has retained mid vowels before non-palatals.

__ C, C ≠ F[+voice], SON#\+C[+hom]
//e// > /a/ / C' __ C

One of the most striking differences between Irish and ScG has been the treatment of //e// before non-palatals. In Irish //e// has been universally lowered to /a/ before all non-palatal segments except before voiced velar stops and voiced velar fricatives in some areas. In ScG this lowering of //e// is not so widespread either in geographical terms or in terms of phonological environment. The change has occurred more frequently in peripheral than in central dialects and most commonly before the velarised segments //N L l R// and the velar fricative //x//.[1] What may be an interim stage in the development //e// > /a/ occurs in some ScG dialects, namely [^{e}a], i.e. [a] with [^{e}] on-glides. The development //e// > /a/ has not been been satisfactorily discussed or explained and a pan-Goedelic study of the subject remains a desideratum. Ó Dochartaigh (1987) is the only in-depth study of its development, although his material is confined to the Ulster dialect area. Ó Dochartaigh (1987: 77) explains the lowering of //e// to /a/ as follows:

> One may presume that the historical change of /e/ to /a/ has come about through the increasing prominence of what must have been an *a*-like on-glide to the following neutral consonant. We might reasonably expect this glide to be most prominent in those circumstances where a sonorant consonant follows, that is, consonants such as /l n r/ where the secondary articulation is of considerable auditory prominence and hence more capable of influencing the preceding vocalic element.

It is clear from Jackson's (1951: 82-3) use of the symbols [e^{a}] and [^{e}a], [$^{\dot{}}$a] that he understood the development //e// > /a/ as originating in the development of *a*-like glides before velarised consonants.[2] This view appears to have received widespread support. Three contributors to a recent book on the history of the Irish Language, *Stair na Gaeilge* (McCone 1994) also explain the development //e// > /a/ as involving the development of *a*-like on-glides, see McCone (1994: 86), McManus (1994: 346), Ua Súilleabháin (1994: 482). This view has been more recently echoed in McCone

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[1]Manx patterns with ScG rather than Irish in this respect.
[2]Cf. Jackson (1972: 129).

(1996: 140-1). None of these authors refers explicitly to the ScG material. It is therefore unlikely that the on-glide argument was in any way based on the synchronic ScG evidence. The *a*-glide argument probably originates in Thurneysen's *Grammar* (GOI: 55-7) where he refers to *a* in the digraph *ea* as representing a glide. Thurneysen's understanding of the development //e// > /a/ was no doubt coloured by his understanding of the nature of consonantal oppositions in Old Irish. He classified Old Irish consonants into three classes: (1) palatal or *i*-quality, (2) neutral or *a*-quality, (3) *u*-quality (GOI: 55). This classification has been refuted by Greene (1962). The use of the the digraph *ea,* since the Middle Irish period, has also perhaps served to promote the notion that *a* was in origin an on-glide. In support of this development reference is usually made to the development of *ui* whereby the change //u// > /i/ is explained as involving the intermediate stages /u$^{\text{i}}$/ > /$^{\text{u}}$i/, see McCone (1994: 86), McManus (1994: 346), Ua Súilleabháin (1994: 482). The fact that the change //e// > /a/ is not yet completed in ScG, and may be on-going, means that we are in a good position to observe change 'in progress' as it were. This will enable us to draw some implications with regard to the development in Irish.

Ó Dochartaigh's explanation differs from that offered by other scholars to date in that he introduces the parameter of sonority into the equation. Ó Dochartaigh is surely right in seeing the change //e// > /a/ as originating in sonorant environments (in ScG at least) since it is exactly in such environments that the change is most common in practically all ScG dialects. Donegan (1985: 136) notes that the function of lowering is to make vowels more sonorant. This at least is suggested by the ScG evidence. This suggests that the original rule for the development //e// > /a/ was as follows:

//e// > /a/ / C' __ C [+sonorant] [+velarised]

The development may have spread from these environments to other sonorant environments. Given the generally accepted hierarchy of sonority, we might expect the lowering of //e// to have spread to affect first the fricatives, and then the plosives. Laver (1994: 504) provides the following general hierarchy of sonority:

low vowels ⊃ mid vowel ⊃ high vowels ⊃ glides ⊃ liquids ⊃ nasals ⊃ fricatives ⊃ affricates ⊃ stops[3]

Given that the change //e// > /a/ can be seen as an increase in the sonority of the original vowel, there is no need to posit an intermediate stage [e$^{\text{a}}$] with *a*-like on-

[3]Using the symbol ⊃ to indicate 'more sonorous than'.

glides. Indeed, it is not clear to me why *a*-like glides should develop 'naturally' before the sonorants //L N R// and as we shall see there are some phonetic objections to the development of *a*-like glides before these segments.

If glides were to develop before the velarised segments //L N R//, we might expect back as opposed to front phones, such as [u], [o], [ɔ] or [ɑ], especially if the development of glides is to be attributed to the secondary articulation of velarisation as suggested by Ó Dochartaigh (1987: 77). This view is supported by the development of *u*-gliding diphthongs before these segments e.g. *ball* /bauL/, *tonn* /touN/, *ceann* /k'auN/, *am* /aum/. The fact that we invariably get front varieties of [a] for original //e// where lowering has occurred would seem to suggest that *a*-glides did not develop as anticipatory on-glides to velarised consonants. Rather the change //e// > /a/ is to be understood as being due to an assimilatory process, whereby the sonority of //e// is increased in sonorous environments. It should also be noted that there is no synchronic phonetic evidence, so far as I am aware, for the existence of *a*-like on-glides in any variety of Gaelic. We prefer to explain the development //e// > /a/ in Gaelic as the gradual lowering of //e//, which began, in ScG dialects at least, in relatively highly sonorant environments:

//e// = [ɛ] > [æ] > [a]

This interpretation of the evidence is not ruled out by the existence in ScG of [^{e}a] sequences. It is significant that [a] is preceded by *e*-like glides most frequently when //e// occurs in absolute initial position or when preceded by labial segments. These glides, phonemically /j/ in some dialects (Ternes 1973: 47), reflect the original palatal quality of preceding consonants. In the case of the labials, these glides may reflect the original palatal quality of these segments preceding //e//. In words containing initial //e//, the glide /j/ reflects the quality of preceding consonants in sandhi. The occurrence of such glides may be described in terms of a rule:

//e// → /j̇a/, /^{e}a/	/ #, C[+labial] __ C
//e// → /a/	otherwise

In other words the development of *e*-like on-glides is dependent upon the preceding elements rather than the destressing of the original nucleus of syllables containing //e//.

A further impetus for the lowering of //e// before non-palatals

We would now like to present an alternative explanation for the development //e// > /a/ in Gaelic which takes account of the Gaelic phonological vowel space, which to date has not been given the proper consideration which it deserves. The correlation between the lowering of //e// on the one hand and the phonetic quality of //a// and non-palatal consonants on the other has not hitherto been noted. It is a fact that the domain for the lowering of //e// is larger in dialects where the low vowel /a/ may be characterised as [+back] (before non-palatals) and where a high number of the non-palatal consonants have the feature [+velarised]. Munster, Ulster and ScG dialects are compared in the following table:

	Munster	**Donegal**	**ScG**
//e// > /a/	almost universal	not before /g d s/	particularly before //L N R//
//a//	[+back]	[–back][–front][4]	[+front][5]
C [+velarised]	all except /h/	not /r t d s/	only /L N R/

Table 4C.1

This suggests that the distinctive features of the low vowel /a/ depended to some extent on the distinctive feature which differentiated broad and slender consonants. If the opposition is based on the feature [+velarised] in all or nearly all cases, it may be predicted that /a/ will be [+back]. Similarly, if only a small number of segments are differentiated by the feature [+velarised], it is more likely that /a/ will be [–back]. Furthermore, table 4C.1 also implies that there is a relationship between the features of /a/ and non-palatal consonants, and the domain of the lowering of //e//. This suggests that the quality of the //a// phoneme as well as the nature of the opposition between broad and slender consonants was a significant factor in the lowering of //e// in Gaelic dialects generally. This in turn suggests that the change //e// > /a/ may have been motivated by the need to make better use of 'unused' phonological space. This may be illustrated by the following diagrams:

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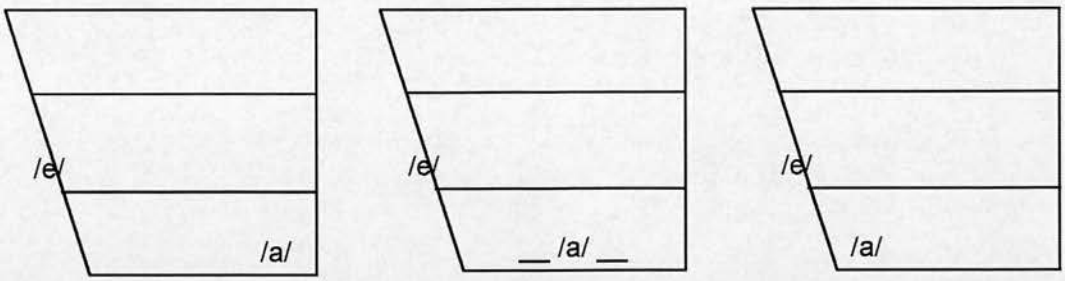
[4]Ó Dochartaigh (1987: 68) concludes that the realisation of /a/ 'is generally that of a low central vowel . . . with the dialects of East Ulster and most of South Donegal having a low back variety'. He also notes that there is 'a somewhat fronted zone lying in the North West of the county [Donegal], with contiguous zones of varying degrees of fronting'.

[5]Cf. Borgstrøm (DOH: 132) who notes that /a/ has a '"flat front" articulation'.



Munster Donegal ScG

Figure 4C.1: The relative position of /e/ and /a/ in Gaelic dialects

The more back the //a// vowel was, the more phonological space there was available for //e// to occupy. This observation is true for //e// in the macro-environment C' __ C. However, the ScG evidence suggests that this also applied to individual micro-environments. For instance, original //a// is likely to have had back allophones in the position before the velarised segments //L N R//. This is still the case in all varieties of Gaelic. This distribution of *a*-phones before //L N R// in ScG provides a neat explanation for the lowering of //e// before these segments. A description of the phonological space occupied by //a// and //e// in CG when preceding these segments is essentially that depicted above for Munster dialects. This implies that the impetus for the change //e// > /a/ in ScG and other Gaelic dialects generally may originally have been due to the tendency of vowel phonemes to occupy 'unused' phonological space.[6] This concurs with an observation made in an earlier chapter that the phonological vowel space in Gaelic may be partitioned into a number of mini-phonological spaces or trajectories, each being defined by consonantal environment, see chapter 3. In particular, it implies that the lowering of //e// before individual consonantal segments depended to some extent on the realisation of //a// before these segments. //e// was more likely to be lowered before a particular consonant if //a// was realised as a back vowel before that consonant.

The realisation of //a// depended to a large extent on the consonantal environment, particularly the post-consonantal environment. In particular, //a// is likely to have been realised as a back vowel when it occurred before velarised consonants. It follows that a favourable environment for the lowering of //e// was in the position before velarised consonants. It is this correlation between the feature [+/-velarised] of consonants and

[6]Cf. Hawkins (1984: 34-5) who notes: 'If a phoneme is relatively 'distant' from, and independent of, its neighbours, it has greater latitude for variation than a relatively more restricted phoneme . . . . The extent of allophonic variation of a phoneme thus depends on its place in the overall pattern, the 'distance' which separates it from its neighbours'.

the quality of //a// which best explains and accounts for the domain and geographical distribution of the development //e// > /a/ in Gaelic. Our alternative explanation of the lowering of //e// implies that the development, notwithstanding the possibility of lexical spread, was not a sudden change but a gradual one which may have occurred over a long period of time, or at any rate as fast or as slow as it took the feature [+velarised] to penetrate the consonantal system.

Orthographic evidence for the change //e// > /a/

The earliest datable examples of the use of the digraph *ea* for Old Irish *e* are to be found in the 9th century Milan glosses, once in a stressed syllable and three times in unstressed syllables: *sleachta, coíneas, aipleat, erladaigear* (GOI: 57). Breatnach (1994: 230) notes the following examples: *díscailteach (:brath) Saltair na Rann* (10th century but contained in Rawl B502, composed c. 1120);[7] *ra aichneastar, chrean (: mear), ba-cear* from the 12th century *Book of Leinster*.[8] Breatnach (1994: 230) is rightly cautious about interpreting the digraph in these instances. He says : b'fhéidir go gciallaíonn *ea* in áit *e* roimh chonsan leathan athrú fuaime . . . cé go bhfuil sé seo an-annamh'. The use of the digraph *ea* may have indicated that //e// had been lowered to /a/ or perhaps that an *a*-like glide had developed following //e// in some instances. However, there can be no certainty with regard to this matter. It is possible that *a* following *e* may have been a device to indicate that the following consonant was non-palatal. We may compare the use of *o* following *i* in the digraph *io* which was an orthographical device intended to indicate that the following consonant was non-palatal.[9] In this context I would explain the rare use of the digraph *ei* for usual *e* in Old Irish as a device for representing a mid as opposed to a low vowel, see GOI: 57.

Carney (1964: xxxii) in his introduction to *The Poems of Blathmac* comments:

> Such rhymes as *chenn: crann* are found in the *Irish Gospel of Thomas* and occasionally in other very old sources. This perhaps suggests that in certain dialects such words as *nem, cenn* were already pronounced as *n'av*, etc. and hence *nem: amrathar*, so far as the final vocalism is concerned, could give a reasonably good rhyme.[10]

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[7]I am grateful to Dr Thomas Clancy for the following example from the same manuscript source: *rathach: nEchdach* (recte *nEchach*).

[8]I have noted the following instances of *ea* in the 12th century *Leabhar na hUidhre*: *Eanfleth* (p. 10), *deachta* Best and Bergin (1929: 10, 27).

[9]It is unlikely that *o* in such positions was ever realised phonetically as /o/, as a glide or otherwise. Modern dialects have /u/ not /o/ where /i/ has been fronted before non-palatals.

[10]Carney also provides the further example of *benar: -canar* (ibid p. 159).

Carney (ibid p. 159) points out that 'the rhyming of *a* with *e* + neutral consonant in accented position is rare'. He gives the following examples: *leass : ass* from Broccán's Hymn, *Thesaurus Palaeohibernicus* (Vol 2: 348, ll. 87-8); *celar : galar* from Sanctán's Hymn (ibid. p. 352, ll. 11-2). Other examples from the 12th century *Book of Leinster* are; *Sengand : dagrand* (p. 25, ll. 787-8; *adrand : degrand)* (p. 39, ll. 1255, 57); *ngalarchland : Lebarcham)* (p. 108, ll. 3428, 30).[11] The rhyming of *a* and *e* is far more common in *deibhidhe* rhymes where one or other of the vowels occurs in the unstressed position. Carney (1964: xxxiii) notes the following examples: *-meth: ifernach, nem: amrathar*. From the *Book of Leinster* we have noted the following examples: *lat: Rachet* (p. 59, ll. 1893-4); *tess : eolass* (p. 100, ll. 3211-2); *tend : Danand* (p. 100, ll. 3227-8); *seng : ferand* (p. 103, ll. 3290-1); *fer : oenmáthar* (p. 105, ll. 3366-7); *do-bera : esbada* (p. 106, ll. 3372-3); *and : Herend* (p. 106, ll. 3388-9).

The relatively high number of instances of *e:a* rhymes in the unstressed position may imply that //e// may have been lowered to /a/ in the unaccented position before it occurred in stressed syllables.[12] It is possible that the use of the rhyme *e:a* in stressed syllables may be an extension of the use of the rhyme *e:a* in the unaccented position and if so sheds no light on the pronunciation of //e// in the Middle Irish period. We must therefore rely on other sources in order to obtain an insight into the pronunciation of //e// before non-palatals in former times.

We can be certain that //e// was realised as /a/ in some words in some Irish dialects at least by the beginning of the 13th century. The evidence for this claim comes from the 13th century 'Song of Dermot and the Earl' which contains Irish placenames and personal names, analysed by O'Rahilly (1930). Here are some examples:

Text	**Reconstructed**[13]
la Barve (occurs twice)	*an Bhearbha*
Crandone	*Creamhthainn*
Thatmelin, Thamelin	*Teach Mo-Ling*
Okarvel	*Ó Cearbhaill*
Malathin (six times)[14]	*Ó Maoil Sheachlainn*
Osathnessy	*Ó Seachnasaigh*

[11]All references are to Best, Bergin and O'Brien (1954).
[12]Either pre- or post-tonically. Cf. *Teach Mo Ling* below.
[13]The reconstructed Irish forms are by O'Rahilly.
[14]But compare *Molethin* (occurs once).

From this evidence McManus (1994: 347) implies that the change //e// > /a/ was completed by the 13th century:

> Is léir ó fhianaise de chineálacha éagsúla gur tharla an t-aistriú seo sa siolla go luath. Cruthaíonn litriú ar nós la *Barve = an Bhearbha* agus *Thamelin = Teach Mo-ling* in 'The Song of Dermot and the Earl' ón 13ú haois . . . mar a seasann *a* na hAngla-Normainnise do *ea* na Gaeilge, *go raibh sé i gcrích faoin am sin*. [italics RÓM]

However, the same source offers more examples of Anglo Norman *e* for Irish //e// than *a*. Here are some illustrative examples:

Text	**Reconstructed**
Kelberi	*Ceall Bearaigh*
Kenlis	*Ceanannas*
Desmund	*Deasmhumhain*
Fernegenal	*Fearann na gCeinéal*
Fernes/z	*Fearna*
Fertekerath	*Fearta Caorach*
Lethcoin (3), Lethchoin, Lescoin, Leschoin	*Leath Chuinn*
Lethunte (2)	*Leath Mhogha*
Sendovenath	*Seandomhnach*
Okelli	*Ó Ceallaigh*

It is significant that *a* for Irish //e// appears most frequently before the segments /x/ and /rv/ in this source. What this particular source implies is that the change //e// > /a/ was underway in the 13th century but not necessarily completed by that time in the dialect or dialects which the text reflects. Indeed there would appear to be complete complementary distribution between the occurrence of *a* and *e* for original //e// in this source. The distribution between *a* and *e* may be described as follows:

Vowel	**Environment**
a	rv (2), Nt[?] < vθ (1), x (3)[15]
e	L (2), r (2), n (2), s, rn, rt, θ (2)

The occurrence of *e* before /L/ in the name *Ó Ceallaigh* is perhaps strange, given that we might expect lowering to have occurred early before the sonorant /L/. However, *e* may reflect an early anglicisation or normanisation of the name prior to the lowering of //e// before //L//.

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[15]One example of *a* for //e// before /x/ is unstressed, i.e. *Teach Mo-Ling*.

Proper names from the 13th to 14th century *Calender of Pipe Rolls* (date: 1230-1344) which contain English spellings of Irish names provide similar evidence of both /e/ and /a/ realisations for original //e// (O'Rahilly *op cit*). Here are some examples:

Text	**Reconstructed**
Catherlogh (no date)	*Ceatharlach*
Natharlech, Narlach (1341)	*(N)Eatharlach*
Balauchhathill (1298)	*Bealach Chathail*
Tachsquithin (1245)	*Teach Sgoithín*
Lethyrdan (1308), Letherdan (1323)	*Leathardán (?)*
Lechayll (c. 1313)	*Leath Cathail*
Clonmethan, Glenmedan (1199)	*Gleann Meadhóin (?)*
Ikeathy, Okethy, Ochethy (1340)	*Uí Cheathaigh*[16]

These instances provide the following distribution for *a* and *e*:

Vowel	**Environment**
a	θ (2), L (1, unstressed), x (1, unstressed)
e	θ (3),[17] ð (1)

There is one questionable instance of //e// > /a/ in the 12th century *Book of Deer*: *ardmandaidib* for *ardmendaidib* (Jackson 1972: 129). The evidence presented above implies that the lowering of //e// to /a/ may have occurred in particular environments in some dialects as early as the 9th century but that the development was still ongoing during the 13th and 14th centuries. This concurs well with the conclusion reached above that the change was not a sudden change but a gradual one which may have occurred over a long period of time. We will only gain a fuller understanding of the development //e// > /a/ in Gaelic once detailed studies are carried out on (a) the occurrence of *ea* graphs in datable identifiable Gaelic texts, and (b) ancillary evidence such as the occurrence of Gaelic words in non-Gaelic contexts such as place-names, non-Gaelic texts etc. An illustration of the usefulness of place-name evidence in this respect can be seen when we consider the historical forms of the following Co. Down place-names: *Granagh* < *Greanach, Scrabo* < *Screabach, Killydressy* < *Ceathramh Dreasach, Bangor* < *Beannchar*. These occur as:

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[16]McManus provides the following references for evidence for //e// > /a/: Murphy (1953: 44, 44), Ó Cuív (1979: 116-7).

[17]It may be significant that two of these instances occur in the word *leath*. Cf. above.

Granagh (Hughes & Hannan 1992: 48)
Grenach (c. 1300), *-grenagh* (1559, 1571), *Grennagh* (1605), *Grannagh* (1623 ff)

Scrabo (Hughes & Hannan 1992: 235)
Scraboc (c. 1275), *Strabok* (c. 1427), *Scrabocke* (c. 1580, c. 1595), *Scrabo* (1683)

Killydressy (Hughes & Hannan 1992: 131)
Carrowdressagh (c. 1637, 1644, 1659), *Killydressy* (1810), /dresi/ (1991)

Bangor (Hughes & Hannan 1992: 146-8)
Benchuir (c. 650), *Beannchor* (c. 1100), *Bennchair* (c. 1125), *Bangowre* (c. 1306)

Notwithstanding the inherently conservative nature of place-name evidence, these forms provide the following tentative results for Down Irish:

//e// had been lowered before //b// in some words by the end of the 13th century, before /N/ by the beginning of the 14th century, before //n// by the first part of the 17th century. //e// was not lowered before /s/ in this area to judge by the evidence of *dreasach*. The lowering of //e// before //b// by the 13th century probably implies that lowering had also taken place before the more sonorant consonant //N// by this period also.[18] The evidence of *greanach* implies that lowering before //n// may have been later. The non-lowering of //e// in *dreasach* concurs with what we know of East Ulster Irish. There is much evidence to suggest that //e// was not lowered to /a/ in East Ulster before /s/, see Ó Dochartaigh (1987: 78-9) for details and references. This brief consideration of place-name evidence illustrates the potential usefulness of non-Gaelic sources to the Gaelic historical linguist. Cf. Ó Maolalaigh (1997).

//e// > /e/ / C' __ C

The retention of /e/ before /g d s h/ in East Ulster and some northern Donegal dialects finds an important parallel in ScG. Our discussion of the ScG evidence showed that it is exactly in these environments that the high mid vowel /e/ (rather than /ɛ/) occurs for original //e//. This shared development forms another isogloss which connects Scotland and Ulster. This evidence may imply among other things that original //e// may have had higher allophones before these segments. We suggested that the retention of //e// before /g d/ but not /k t/ may imply that the feature [+voice] may have

[18]Assuming, as we have above, that stops are inherently less sonorous than sonorants, and also that //e// was lowered first in the most sonorant environments.

been a significant factor in the retention and lowering of //e//. However, since voiced stops are arguably more sonorant than voiceless stops, this vitiates against the sonority argument for the development //e// > /a/. We also suggested that the retention of //e// before the segments /s h/ may be related to the fact that for both of these consonants there is no voiced counterpart.[19]

//e// > /o/, /ɤ/ / C' __ C

Original //e// is realised in some words in Irish as /o/ particularly before the velars /g k x/. The development //e// > /o/ has also occurred in some ScG dialects before /ɣ/ although we have argued that this is likely to have involved the intermediate stage of /eu/. Related to this is the development //e// > /ɤ/ which is particularly common before /g/ in some Lewis dialects and fairly widespread before /ɣ/ in most ScG dialects. We will see below that a similar development may have occurred in Ulster dialects.

//e// > /i/ / C' __ C

The raising of //e// to /i/ is most common in the environment m' __ s in ScG dialects. Instances from Irish dialects are rare, e.g. *measardha(cht)* (IT) *neasacht* (IE). This particular ScG development forms a clear isogloss which separates Scotland from Ireland. The difference between Irish and ScG may be seen in the different realisations of Irish *measa* /a/ and ScG *measa* /i/.[20] The preponderance of this development in ScG is no doubt to be explained as being due the more crowded phonological space in the mid to high front vowel area. Compare ScG /i/~/e/~/ɛ/ with Irish /i/~/e/. We have already noted that //e// is likely to have had higher allophones when it occurred before /s/. This coupled with the nasal environment in words of the shape m' __ s would have led naturally to the raising of //e// to /i/ in this environment.

//e// > /i/ / C' __ C'

The raising of //e// to /i/ in the prepalatal environment is common to both Irish and ScG dialects. It is particularly common in the environment m' __ ʃ and before (palatal) nasals. Raising also occurs in both languages in non-nasal envioronments. It appears to be particularly common before the svarabhakti clusters //r'g'//, //r'v'//, //l'g'//. For instance the change //e// > /i/ is attested in the word *teilg* > *tilg* in all Gaelic dialects.

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[19]Some Irish and ScG dialects have a /z/ phoneme but its occurrence is rare and likely to be a late development, perhaps even a borrowing from English in some cases.

[20]Manx appears to go with Irish rather than ScG in this respect. Cf. *messey* [ɛ] Jackson (1955: 29).

__ F[+voice] [+labial]

Similarities between Irish and ScG dialects are obscured by the fact that disyllables have been reduced to monosyllables in words containing intervocalic fricatives in Irish. We have argued that all modern reflexes of //ev// may be derived from /ew/ sequences rather than positing an early merger between //e// and //o// prior to the vocalisation of //v//. The Irish evidence is ambiguous with regard to the lowering of //e// before //v// as the development of //av// (and //ov//) is in the vast majority of dialects identical to the development of //ev//. ScG on the other hand is different in this respect as the development of //ev// and //av// and //ov// are on the whole different. This would seem to imply that //e// was not lowered to /a/ in the majority of ScG dialects before //v//. The sequences //ev// and //eṽ// have developed differently in most dialects of Irish and ScG (exceptions include IWM, ICF). The vocalisation of //ṽ// has yielded *u*-gliding diphthongs, frequently nasalised, in both Irish and ScG. In Irish where *u*-gliding diphthongs have developed for original //ev//, the first element is usually differentiated from the first element of *u*-gliding diphthongal reflexes arising from //eṽ//, by having a more central starting point. //ev// has also yielded monophthongs in both languages. We explained this difference in development as being due to the fact that //v// was vocalised prior to //ṽ//. We also pointed out that the *u*-gliding diphthongs which are the normal reflexes of //eṽ// sequences reflect the original development of //ev// sequences.

The evidence is too sparse to make useful comparisons between the development of //e// before //v'// and //ṽ'// in Irish and ScG dialects.

__ F[+voice] [+dental]\[+velar]

A significant difference between Irish and ScG dialects has been the development of *i*-gliding diphthongs in Munster and Connacht dialects for original //eð/ɣ// which is generally speaking unparalleled in ScG. The development //e// > /ɤ(:)/ occurs fequently in ScG. We have argued that the development //e// > /e:/ before //ð/ɣ// in Ulster dialects may derive from /ɤ:/. We have also argued that /ɤ:/ in both languages is likely to have derived from *u*- or *ɯ*-gliding diphthongs. The development of //eð/ɣ// sequences therefore provides us with yet another isogloss which unites Ulster and Scotland. There is, however, noticeably more variation in the reflexes of //eð/ɣ// sequences in ScG than in Irish. As well as /ɤ(:)/, we also find /o/, /eo/ etc., all of which may be derived from *u*- or *ɯ*-gliding diphthongs. The seemingly diverse developments in particular ScG dialects may be explained by the fact that the

vocalisation of /ɣ/ < //ð/ɣ// may be relatively recent in Scotland, and moreover that the process of vocalisation is on-going.

The development of //e// and //a// before //ð/ɣ// is identical for all Irish dialects. This may imply that //e// was lowered to /a/ before the vocalisation of the fricatives //ð/ɣ//. This is not necessary since the present state of affairs could be due to a later merger following the vocalisation of the fricatives and need not imply that //e// and //a// had merged before this point. However, //e// certainly was lowered to /a/ before word final stressed /ɣ/, e.g. *feadh* and this may imply that //e// was generally lowered to /a/ before /ɣ/ in Irish dialects. Similarly the development of //e// and //a// / __ ɣ has on the whole been identical in ScG dialects also, both normally yielding /ɤ(:)/. However, it would appear that //a// and //e// have developed differently in some cases in some ScG dialects, e.g. Ross-shire, DOH. The normal development of //að/ɣ// in these dialects is /ɤ(:)/. However, //eð/ɣ// yields /e:/, /eɤ:/ in R (*meadhg, teaghlach*), /eo/ (*feadhain*), /o:/ (*deagh*) in DOH and /ɤ/ in both (*feadhain*) these dialects. This may imply that the seemingly parallel developments of //a// and //e// in other ScG dialects are the result of a later merger following the vocalisation of /ɣ/ as follows:

//a// > /ɤ(:)/
//e// > /eɤ(:)/ > /ɤ(:)/

Alternatively, the seemingly regular development of //að/ɣ// sequences *vis-à-vis* the more erratic development of //eð/ɣ// sequences in some ScG dialects may suggest that the vocalisation of /ɣ/ occurred historically earlier following //a// than //e//; see chapter 8 for a discussion of the staggered vocalisation of /ɣ/.

Our discussion of the development of //eð/ɣ// sequences led us to conclude that Irish and ScG dialects differed in the development of svarabhakti in the clusters //ðC//, //ɣC//. The evidence suggested that svarabhakti had developed in the cluster //ðg// (as witnessed in *meadhg*) in southern Irish dialects but not in ScG dialects.

The development of //e// and //a// before //ð'/ɣ'// has been identical in all Irish dialects with the exception of Donegal. The evidence for the development of //eð'/ɣ'// is sparse. Such evidence as does exist suggests that the development of //e// and //a// in ScG dialects may have been different: //eð'/ɣ'// > /e/; //að'/ɣ'// > /ɛ/.

__ SON#\+C[+hom]

Before //R// and //rC[+voice]// groups lengthening is the norm in all Gaelic dialects. Lengthening of //e// is not attested in any of the monographs utilised in the present study before //rC[–voice]// groups. Lengthening to /a:/ is widespread in Irish dialects with the exception of northern Donegal and East Ulster dialects where /e:/ occurs especially following labials.[21] Lengthening to /a:/ (> /ɔ:/ ESG) and /ɛ:/ is attested for ScG. The retention of mid vowels in some ScG and Ulster dialects forms yet another isogloss which connects Ulster to Scotland. The occurrence of /e:/ (Irish), /ɛ:/ (ScG) for //eR// sequences suggests that for those dialects where mid vowels have been retained, //e// was lengthened before //R// and //rC[+voice]// groups prior to the lowering of //e// to /a/. However, we also argued against this development for dialects in which there is evidence for the raising of //a:// to /e:/. The occurrence of /a:/ for //eR// in both Irish and ScG implies that //e// was lowered to /a/ prior to the lengthening of //a// before //R//, cf. Ó Dochartaigh (1987: 82).

The development of *u*- and *i*-gliding diphthongs is common to Irish and ScG dialects where diphthongisation occurs before //L N M// and //L' N' M'// respectively. Raising to /i/ (/i:/) appears frequently before the nasals //N' M'// in both ScG and Irish.

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[21]It is worth noting that lengthening to /e:/ [ɛ:] seems to occur in Rathlin Island most frequently following labials, e.g. *fearr, bearnach* but cf. /a:/ in *gearr, cearr*. Against this compare *ceardach* [e:] but [ɛ] *ceard*, see Holmer (1942).

Chapter 5

Section A
Development of //o// in Irish

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //o// has been retained on the whole in Irish dialects only before non-palatals other than fricatives and long sonorants (in certain environments). Munster dialects with forward stress reduce original stressed //o// usually to /ə/ before non-palatals and to /i/ before palatals in pretonic position. In Connacht dialects, original stressed //o// is raised to /u/ when the second syllable contains either of the long vowels /a:/ or /o:/.[1] There is clearly an implicational relationship between the variables V: = /a: o:/ which may be expressed as /o:/ ⇒ /a:/. In other words if raising to /u/ occurs in a particular dialect when the second syllable contains /o:/, then it will also occur when the second syllable contains /a:/. This implicational relationship for Connacht dialects may be expressed in the following scalogram:

	Raising of //o// to /u/ before: Variable V: = a:, o:	
Dialect	a:	o:
IE	+	-
IT, ICF	+	+

Table 5A.1

For discussion of this development, see section C in chapters 3 and 4.

The fronting and raising of //o// / __ C'

//o// has been most unstable in the prepalatal position. The general development has been towards fronting and raising. Connacht dialects have on the whole retained a mid vowel in the prepalatal position, usually fronted or centralised. This variety of vowel is interpreted variously as /o/ or /e/. Much variation between both phonemes has been reported, particularly for Connacht dialects (but cf. IR also). IT is unique amongst Irish dialects in not having /e/ for original //o// in the prepalatal environment. It may be significant that Seán de Búrca, amongst all scholars who published monographs on Irish dialects, was the only native speaker to have described his own dialect. It is possible, based on this evidence, that other descriptions of Irish dialects which posit

[1] /a:/, /o:/ ICF, IT; /a:/ only in IE. The change is also attested in *coiscéim* > *coisméig* in ICF where the second syllable contains /e:/. However, it is not clear if *oi* here derives from //o// or //u//.

the existence of two mid vowel phonemes, namely /o/ and /e/, in the prepalatal position as reflexes of original //o// may be uneconomical, but see chapter 2.

Raising to /i/ also occurs in the prepalatal position, particularly in Munster and Donegal dialects. It is not clear if the development //o// > /i/ involved the intermediate stages //o// > /e/ > /i/ or //o// > /u/ > /i/ (see below); it is of course possible that //o// was raised and fronted to /i/ without the intermediary stages //o// > /e/ or //o// > /u/. The following table gives a general impression of the development of //o// in the prepalatal position in Irish dialects:

//o// > /o/, /e/, /i/ / __ C' (Irish)[2]

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
Nasals: soineann	i	--	--	i	--	--	i[3]
doineann	--	--	--	--	i	i	i[4]
coinne	i	i	i	--	--	i	o
sloinneadh	i	--	--	a	a	i	i
a-nois	i	i	i	i	i	i	i
goimh	--	i	a	a	ã	--	o
roimhe	i	--	i	i	i	i	i
doimhneas	e	i	--	--	ã	--	o
f, k __ r'							
foirm	i	i	--	--	--	--	--
foirfe	i	--	--	--	--	--	--
foireann	i	i	e[5]	--	--	i[6]	--
foirseadh	i	i	o	o	--	ɔ[7]	--
coire	i	--	--	--	e	--[8]	ɔ
__ rt'							
doirt	o	--	o	--	o:	--	ɔ(:)
toirt	--	o (~e)	--	o	o	ɔ	ɔ
goirt[9]	--	--	o	o	--	--	ɔ
various:							
toil	o	o~e	i	i	e	ɔ	ɔ
troid	o	e	e	e	e	i	i
oibr-	e	e	ai	e	e	i	i
coigilt	--	--	i	e	--	--	e[10]

[2]It is worth noting that the change //o// > /i/ does not apparently have the effect of palatalising the preceding consonant unlike the chage //u// > /i/. Cf. *toil* /ti/ ~ *tuilleadh* /t'i/ (ICF).
[3]*soineanta*.
[4]But /o/ *doineanta*.
[5]GCF: 37.
[6]/i/ also DT: 51.
[7]/ɔ:/ DT: 60.
[8]/ɔ/ DT 26.
[9]/i/ occurs in Corca Dhuibhne. See Ó Sé (1982: 38).
[10]But /a/ *coigil* (vb).

	IWM	IR	ICF	IT	IE	DD	TY
no /i/ realisations							
clois-	o	--	--	--	--	--	--
loisg	o	--	--	e	o	--	o
cois	--	o (~e)	o	e	--	ɔ	ɔ, o
toisg	o	--	--	--	--	--	ɔ
sroich	o	--	e(:)	--	--	--	--
sgoil	o	o~e	o~e	e	o (~e)	ɔ	o[11]
sgoilt	o	--	e	e	e	--	ɔ
doiligh	--	--	e	e	e	a	o[12]
coirce	o	--	--	e	o (~e)	ɔ	o
croiceann[13]	e	e	a	a	a	a	e, a
loit	o	--	o	--	--	ɔ	ɔ

Table 5A.2

Table 5A.2 may be analysed as follows:

	IWM	IR	ICF	IT	IE	DD	TY
Total returns	24	14	19	19	18	17	25
/o/ tokens	11	4	6	3	5	7	16
%	46	29	32	16	28	41	64
/e/ tokens	3	7	6	9	8	0	2[14]
%	13	50	32	47	44	47	8
/i/ tokens	10	7	5	4	3	8	7
%	42	50	26	21	17	47	28

Table 5A.3

These results are presented in the following graph:

[11]But /ɔ/ *scoiltreacha*.

[12]But /a/ *doilghe*.

[13]/i/ also occurs in Munster. See Ó Sé (1982: 38).

[14]The two words which illustrate the development //o// > /e/ here are *coigilt, croiceann* which may have involved the intermediate development //o// > /a/. Note that /a/ is attested in this dialect in *coigilt* (vb) and in *croiceann*.

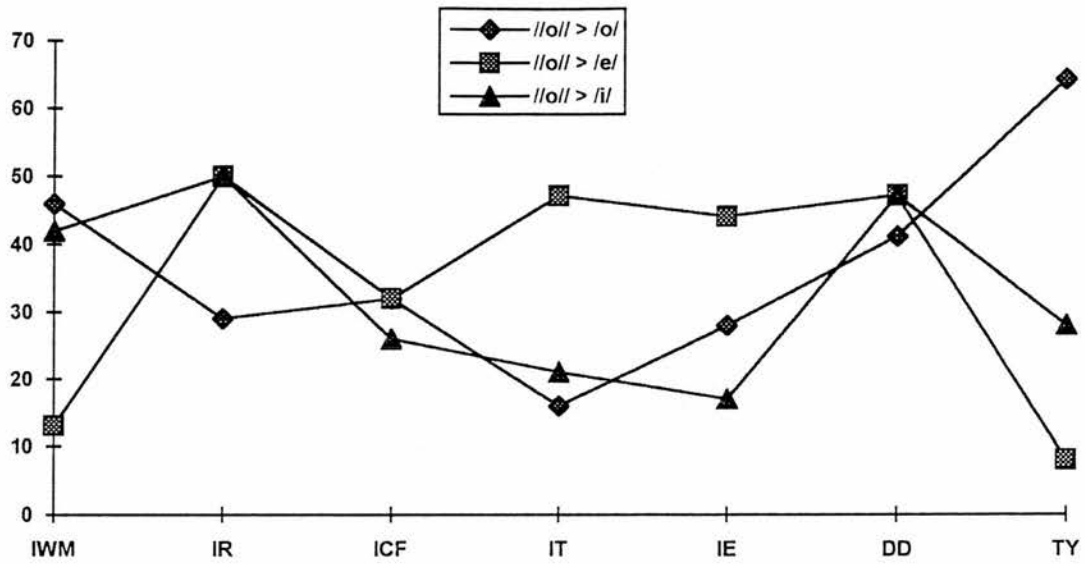

Chart 5A.1

Based on our sample, we may rank the outcomes for each dialect as follows.

//o// / __ C' →:

IWM: /o/ >> /i/ >> /e/
IR: /e/ = /i/ >> /o/
ICF: /o/ = /e/ >> /i/
IT: /e/ >> /i/ >> /o/
IE: /e/ >> /o/ >> /i/
DD: /e/ = /i/ >> /o/
TY: /o/ >> /i/ >> /e/

The first thing to notice is that mid vowels are the most common reflexes of original //o// in our sample in all dialects. //o// is retained most frequently in Donegal dialects, although a significantly high proportion of /o/ tokens occur in IWM also. Fronting to /e/ is most common in Connacht dialects but also in IR. Fronting to /e/ is least common at the extreme locations of our sample, i.e. in IWM and TY. Fronting to /i/ is most common in Munster and Donegal dialects.

//o// > /i/ in Irish

Raising to /i/ is attested in all dialects although the phonological environments and the lexemes involved vary to a certain extent throughout the dialects. Raising preceding nasal segments occurs in all dialects, e.g. *roimhe* and also following *n* in the adverb *an(o)is*. Other than in nasal environments, the occurrence of /i/ for original //o// in the main dialectal areas of Munster, Connacht and Ulster is almost complementary in its distribution both phonologically and lexically. This is illustrated in the following table,

where + indicates that raising to /i/ is attested, and – indicates that raising to /i/ is not attested:

	Munster	Connacht	Ulster
f, k __ r'	+	–[15]	(+)[16]
toil	–	+	–
coigilt	?	+	–
troid	–	–	+
oibr-	–	–	+

Table 5A.4

It is difficult to see any shared or common feature which would explain the raising in all of these instances. It is possible, though unprovable, that the raising to /i/ in some or all of these cases involved the intermediate stage of raising to /u/. Fronting of //u// to /i/ is well attested in Irish. The frequent raising following the labial /f/ in Munster is significant and it is possible that //o// may have been raised to /u/ in this environment before palatals. However, raising of //o// to /u/ is not otherwise common following the labial /f/ in Irish dialects. The same argument applies to raising following /k/ as witnessed in *coire* (IWM), *coigilt* (ICF). The nouns *toil* (ICF), *troid* (DD, TY) may derive from *tuil* and **truid* respectively with analogical /u/ based on the morphophonemic alternations: //oC// (N) ~ //uC'// (D, G) and //uC'// (N) ~ //oC// (G). This would imply that *tuil* was in origin an oblique form based on a dative *tuil* or genitive *tuile* from the original nominative *tol*. The dative *tuil* and the genitive *tuile* are attested in the Würzburg glosses, see DIL, s.v. *tol*. This would explain the anomolous development in some Connacht dialects (ICF, IT). Similarly, the Donegal forms of *toil* with /ɔ/ may reflect oblique forms of an underlying nominative *tal*, see DIL (ibid). Ulster *troid* /i/ may derive from **truid*, a back formation based on the genitive form *troda*, and the morphophonemic pattern //uC'// (N) ~ //oC// (G) witnessed in for example *druim* (N) ~ *droma* (G).[17]

The latter half of table 5A.2 above indicates that there are many environments and lexical items where raising to /i/ is not attested in any of the dialects used for the purposes of the present study. For instance, raising to /i/ does not normally occur before the cluster //rt'//, where //o// is usually retained, e.g. *doirt, toirt, goirt*.[18] Similarly raising to /i/ is not attested in any Irish dialect so far as I am aware in the lexemes *sgoil, cois* both originally (and in some dialects still) oblique forms of *sgol*

[15]/e/ in *foireann* (GCF) may represent a case of *r*-lowering of /i/. Cf. *iris, tirim* //i// > /r/ (ICF).
[16]In *foireann* only according to our sources.
[17]Note also that a dative *trut* is attested in the early sources, see DIL s.v. *trot*.
[18]Ó Sé (1982: 38), however, notes /i/ in *goirt*. Cf. /i/ *foirseadh* in Munster dialects only.

and *cos* respectively.[19] Leaving aside words of the shape C __ rt', it is worth noting that //o// in many of the words for which raising to /i/ is not attested is preceded by the velar /k/ (/g/ in the case of the cluster /sg/), and velarised //L//, e.g. *cois, coirce, sgoil, sgoilt, loisg, loit, clois*. However, this does not account for the lack of raising in *toisg, sroich, doiligh, croiceann*.[20] The failure of //o// to raise to /i/ is noticeable before the segment /ʃ/, e.g. *clois, loisg, cois, toisg* but cf. /i/ in *a-nois* universally in Irish dialects. Our discussion leads to the conclusion that raising to /i/ was phonologically conditioned and occurred frequently preceding nasal segments, and in Munster, also in the environment f __ r'. Otherwise, the raising appears to have been lexically conditioned, in some cases perhaps representing back formations.

We concluded in chapter 2 (see table 2A.5) that original //o// in Donegal dialects develops as follows:

//o// → [o] / __ N n m b g d
→ [ɔ] / __ t k s x h r (R) r' t' ʃ l' (L') (Donegal)

It follows that //o/ has been retained most commonly in Donegal dialects before the palatalised apicals //r' t' ʃ l' //. Retention of //o// in such cases, but not before other palatals, may be due to the weaker secondary palatal articulation of these apicals. This is clear also from table 5A.2 above (latter portion).

It follows from table 5A.2 that //o// has frequently been lowered to /a/ before nasal segments in Connacht dialects, e.g. *sloinneadh* (IT, IE), *goimh* (ICF, IT, IE), *doimhneas* (IE). Given that raising to /i/ is the norm throughout Irish dialects in these environments, it is possible that /a/ represents a secondary lowering of /i/ < //o// in these words. We may compare the lowering of //i// before nasals in *innseacht* (IE), *ionann* (ICF, IT, IE, DD, TY).[21] If correct, the development in these instances represents a different development to that discussed below, i.e. //o// > /a/ before palatals and non-palatals.

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[19]But cf. *cuis* (D), GOI: 48.
[20]Ó Sé (1982: 38) reports /i/ in *croiceann*.
[21]It is also possible that //o// was fronted to /e/ and then lowered to /a/ in these words.

Fronting of //o// before palatals

The phonological environments for which fronting of //o// to /i/, /e/ in Irish dialects may be analysed as follows (based on table 5A.2 above):[22]

C __	k (5) >> f (4) >> d, L, g[23] (3) >> s, t, n, r, kr, tr, #, sr (1) __
__ C'	__ r' (6) >> ʃ, ṽ', l' (3) >> n', N' (2) >> d', b'r', g', x', L', k' (1)

This suggests that fronting of //o// in Irish dialects occurred most commonly in the following environments (considering only environments for which two or more words are attested for the fronting of //o//):

C_x __ C_y C_x = k >> f >> d, L, g C_y = r' >> ʃ, ṽ', l' >> n', N'

It is not immediately clear whether or not the development //o// > /i/ involved the intermediate development of //o// > /u/.[24] Certainly /u/ does not figure among the synchronic relfexes of //o// in the prepalatal position other than in some Donegal dialects in which case the /u/ can be shown to be a secondary development of an original /i/.[25] If //o// had been raised to /u/ before it was fronted to /i/ in the prepalatal position, then we would expect /u/~/i/ variation in words like *coinne, foireann* etc. just as we find variation between /u/ and /i/ in *cuid*, see IWM: 103. However, variation between /u/~/i/ usually only occurs in reflexes of original //u//, rarely in reflexes of //o// so far as I can judge from the available monographs (but cf. /u/~/i/ *goin* (ICF)). We have already noted that //o// has not been raised in non-nasal environments generally in Connacht dialects. Taken together then, the synchronic evidence argues against the raising of //o// to //u// in the prepalatal position in Irish dialects. How then do we reconcile the frequent spelling of original //o// in the prepalatal position as *ui* in the Early Modern and Modern periods? If we are correct in concluding that //o// was not raised to /u/ before it was fronted to /i/ in Irish dialects,

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[22]Numbers in brackets following phonological environments indicate the number of words for which the fronting of //o// is attested in table 5A.2.

[23]/L/ and /g/ include here /sL/, /kL/ and /sg/ respectively.

[24]I exclude instances of morphophonemic variation between //oC// ~ //uC'// as witnessed in *bord* ~ *buird* (pl) since the raising of *o* to *u* in such instances occurred before the period of Old Irish itself, and as such, do not represent CG phonological developments. O'Rahilly (IDPP: 196-9) does not address this question.

[25]Sommerfelt (DT: 22) quotes /u/~/o/ *coinín, coinneáilt, coinnleóir*. However, it is clear from other evidence cited by Sommerfelt that /u/ in such cases has developed secondarily from /i/ rather than /o/ following the velar stop /k/ in the prepalatal position. For instance, the genitive sg *cait* /kut'/ of *cat*, which varies with /kit'/ must be a development of /i/ < //a// since there is no evidence to suggest the existence of a genitive form */kut'/ with original //u//. Sommerfelt (DT: 21-2) himself derives /u/ in such instances from the off-glide following /k/ and preceding /i/. The /u/ which occurs in this position, transcribed [U], is phonetically quite different to [u] which occurs in *dubh* for example.

then we must assume that orthographical *ui* symbolised an *i*-like vowel. In other words when *ui* represents original //o// in our literary sources, we can be almost certain that an /i/ realisation is intended. This view has recently been expressed by McManus (1994: 347) in reference to *oi* ~ *ui* variation in Classical Irish:

> Tharlódh mar sin gur frithchaitheamh ar na foráis sin sealaíochtaí áirithe de chuid na Nua-Ghaeilge Clasaicí ar nós *loighe/luighe, muileann/moileann, buile/boile* srl., .i. nach péirí éagsúla iad ach aon fhoirm amháin (/Liɣ'ə/, /mil'əN/, /bil'ə/ srl.) inar féidir leithne an túschonsain a chur in iúl leis na sleamhnóga *o* nó *u* mar a dhéantar i siollaí neamhaiceanta.

McManus (1994: 346) implies that the raising of //o// to /i/ did not involve the intermediate stage of //o// > /u/ when he states: 'neartaigh na sleamhnóga *a* in *ea*, *i* in *oi* agus *ui* . . . go ndearnadh príomhghutaí an tsiolla díobh'.

It is of course possible that *ui* was intended to symbolise *u*-like vowels in some, if not all cases. However, such realisations are likely to represent a secondary development of /i/ which has been fronted from //o//. It would be unwise, however, to claim that all instances of *ui* for original //o// represented an underlying /i/ rather than /u/ since this would rule out the possibility of analogy having affected individual words. For instance it is possible that the *u*-vocalism indicated by the spelling *Muire* was influenced by *muirn* 'favour', *muirnín* 'darling' (McManus 1982: 203). Cf. our discussion below in section D of ScG *tuirseach*. Our discussion of the synchronic evidence highlights the essential importance of considering the evidence from the modern dialects in order to gain a proper understanding of specific developments in earlier periods of the language. In particular it warns against the danger of assuming that orthographic forms necessarily reflect phonological reality.

One of the most significant minor developments of //ǫ// in the environment __ C in all Irish dialects has been raising to /u/ which is particularly common in the vacinity of nasal segments. There has also been a tendency for this raising to take place in the vacinity of velar and labial segments, where variation frequently exists between /o/ and /u/. This is illustrated in the following table:

//o// > /u/ in Irish dialects

There is evidence for the raising of //o// to /u/ before non palatals only. Cf. discussion of //o// > /i/ above.

	IWM	IR	ICF	IT	IE	DD	TY
moch	**u**	--	**o~u**	o	o	--	ɔ
cnoc	(n)**u**	(n)**u**	(r)**u**	(r)**u**	(r)**u**	(r)o	o
mol	o	o	**u**	o	o	ɔ	ɔ
molt	o	--	--	**u**	--	ɔ	ɔ, o
modh	--	--	**u**	--	--	--	ɔ[26]
nocht	o	**o~u**	o	o	--	ɔ	ɔ
a-nocht	**u**	**o~u**	o	o	--	ɔ	ɔ, o
Nollaig	o	o	o	o	o	o	**ɔ, o**
cromadh	o	--	**u**	**u**	--	o	**o**
lomradh	--	o	--	**u**	--	--	--
trom, lom	ou	əu	**u**(:)	**u**	**u**	o	**o**
sonas	--	--	**u**	**u**	**u**	--	a
dona	--	**u**	--	a	**u**	o	**ɔ, o**
ronnach	--	--	--	--	u	--	--
bog	o	**o~u**	o	o	o	o	**o**
slogadh[27]	--	--	**u**	--	--	--	o
gob	o	**o~u**	--	o	o	o	**o**
gor	--	--	**u**	o	--	o	**ɔ**
focal	o	o	**o~u**	o	o	ɔ	ɔ
ocras	o	o	**u**	**u**	--	ɔ	ɔ, a
folt	o	--	**u**	--	--	--	--
folcadh	o	--	**u**	--	--	--	ɔ
ogh	ov	**uv**	**u, uw**	**uv**	**uf**	--	o,iv'
(bosca)	--	--	**u**	--	--	**u**[28]	**o**

Table 5A.5

Table 5A.5 may be analysed as follows:[29]

	IWM	IR	ICF	IT	IE	DD	TY
Returns	16	13	19	18	12	14	21
No of /u/	3	7	14	8	6	0 (8)	0 (11)
%	19	54	74	44	50	57	52

Table 5A.6

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[26]*modhamhail*.

[27]*Slogadh* is perhaps not a good example as it is the verbal noun of the verb *sluicid, slocaid* and appears variously as *slucud, slocud, slocod*. See DIL s.v. *slucud* and *sluicid*.

[28]*bocsa*, phonetically [U].

[29]The numbers in brackets in columns referring to DD, TY refer to the instances of /o/ (as opposed to /ɔ/) in the Donegal material. The change //o// > /o/ which is the normal realisation of //u// in these dialects may, according to one interpretation (O'Rahilly (IDPP: 177), be seen as a raising of original //o//. In our discussion of the phonology of Donegal dialects, we noted that some scholars have interpeted instances of [o̜] as allophones of the /u/ phoneme.

These results are represented in the following chart:

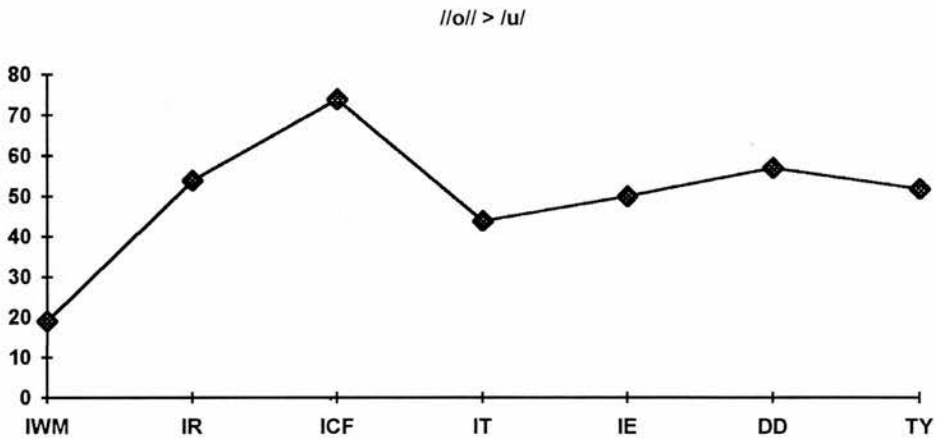

Chart 5A.2

Chart 5A.2 illustrates that raising to /u/ occurs to a similar degree in all Irish dialects (if we include instances of //o// > /o/ in Donegal) although it is not as common in IWM as in other dialects. A consideration of the preceding and following consonantal environments for the raising of //o// to /u/ provides the following results:[30]

C __	m (4) >> N, b, f, Cr, L,[31] # (2) >> s, d, r (1) __
__ C	__ x, k, L(C), m (3) >> ɣ, l, n, g (2) >> N, b, r, s (1)

This provides the following optimal environments for the raising of //o// to /u/ in Irish dialects (considering only environments for which at least two words are attested which illustrate the development //o// > /u/):

C_X __ C_Y C_X = m >> N, b, f, Cr, L, # C_Y = x, k, L(C), m >> ɣ, l, n, g

This shows that raising has occurred most commonly in the vacinity of nasals — particularly labial nasals — and velar segments. A consideration of the realisation of *loch, locht, bocht, ocht,* for which raising is not attested in Irish dialects, *vis-a-vis* words containing //ox// in table 5A.5, shows that the raising is conditioned by a preceding nasal segment:

[30]The numbers in brackets refer to the number of words for which the change //o// > /u/ is attested in a particular environment.
[31]Including /sL/.

	IWM	IR	ICF	IT	IE	DD	TY
loch	o	--	o	o	o	--	ɔ
locht	o	o	o	o	--	--	ɔ
bocht	o	o	o	o	o	ɔ	ɔ
ocht	o	--	o	o	o	ɔ	ɔ

Table 5A.7

//o// > /a/

The next most significant development of //o// is its lowering to /a/. The development is, according to the evidence of the sources used for the present study, not generally attested in Munster dialects with the exception of the word *fada* < Old Irish *foda* //o//, and perhaps also *oifreann* 'mass'. The word class {//o// > /a/} is larger in Donegal dialects than in Connacht dialects. The change appears, from the available evidence, to be more widespread before non-palatals than before palatals. The following tables give a clear indication of the geographical distribution of the change, as well as the phonological environments in which the change took place:

//o// > /a/ / __ C

	IWM	IR	ICF	IT	IE	DD	TY
foda	**a**	**a**	**a**	**a**	**a**	**a**	**a, e**
foscadh	--	--	**a**	**a**	**a**	**a**	**a**
folach	--	(ə)(PRT)[32]	**a**	--	**a**		**a**, ɔ
folamh	o	o	**a**	**a**	**a**	ɔ[33]	**a**, ɔ
fostaigh	--	--	**a**	--	**a**	**a**	**a**
foradh	--	--	--	--	--	**a**	--
folláin	--	--	--	u	--[34]	**a**	**a, ɔ**
cora	--	--	**a**	--	--	--	ɔ
coscartha	o[35]	--	**a**	**a**	**a**, o[36]	**a**[37]	**o**
crothadh	--	--	**a**	**a**	**a**	**ai**	--
colbtha	--	--	--	--	**a**[38]	ɔ	ɔ, o[39]
copóg	--	--	--	u	**a**	ɔ	**a**
coraigheacht	--	--	--	--	**a**	ɔ	**a**
cognamh	--	--	--	--	--	**a**	--
coll	--	--	(au)[40]	o	--	**a**	--
boladh	--	--	**a**	**a**	**a**	ɔ	ɔ, **a**
borb	--	o	o	o	o	**a**	--
blogóid	--	--	--	**a**	**a**	**a**	--
brochán	--	--	--	--	--	**a**	--

[32]*folach* > *flach*.
[33]*folmhaghadh*.
[34]Cf. phrase *go folcanta falcanta* IE: 119, line 786.
[35]*cosc*.
[36]/o/ 'overcoming'; /a/ 'thawing'.
[37]*coscairt*.
[38]/a/ 'calf of leg'; /o/ 'measure of land'. cf. *colpach* /o/ 'heifer'.
[39]*colbha* 'edge (of bed)'.
[40]East Cois Fhairrge, ICF: 123, §665.

	IWM	IR	ICF	IT	IE	DD	TY
brollach	ə (PRT)[41]	--	--	u	o	**a**	**a**
ortha	--	--	**a**	o:	--	--	ɔ:
oscal	o	--	**a**	**a**	**a**	**a**	--
orc	--	--	--	**a**	**a**[42]	--	**a**[43]
sop	o	--	o	o	o	**a**	**a**
scothadh	--	--	o:[44]	--	o	**a**	**a**
sporán	--	(ə) (PRT)	u	u	u	**a**	--
tormán	--	--	--	--	--	**a**	**a**
dona	--	u	u[45]	**a**	u	o	ɔ, o

Table 5A.8

The occurrence of /a/ for //o// is analysed in the following table and chart:

	IWM	IR	ICF	IT	IE	DD	TY
Returns	6	6	17	18	20	24	19
/a/	1	1	11	10	14	17	14
%	17	17	65	56	70	71	74

Table 5A.9

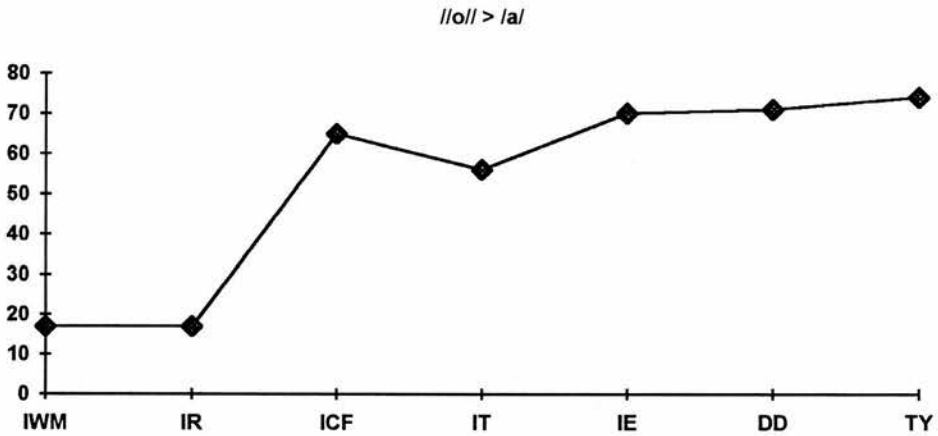

Chart 5A.3

Chart 5A.3 shows that the change //o// > /a/ increases in frequency the more northerly we proceed. If we consider the development //o// > /a/ in Connacht and Donegal dialects in terms of preceding consonantal environments f __,[46] k __, b(C) __, # __ in which it occurs, we get the following results:

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[41]*brollach* > *burlach*, IWM: 128, §420.
[42]*orcán*.
[43]*orcán*.
[44]'to pass out'.
[45]GCF.
[46]Excluding the word *fada* which shows //o// > /a/ in all dialects. We also exclude instances of diphthongisation from our figures, e.g. *crothadh* (DD), *coll* (ICF).

	f__	#__	k__	b(C)__
Returns	21	10	23	17
/a/	19	8	15	11
%	90	80	65	65

Table 5A.10

This provides the following hierarchical ordering for the most favourable environments for the change //o// > /a/:

f__ >> #__ >> k__ = b(C)__ **(A)**

This shows that the change //o// > /a/ occurs most consistently following the labial /f/. Thurneysen (GOI: 52) notes for Old Irish that 'between *f* and palatal consonants *a* is often, though not consistently, written for *o*'. This evidence coupled with (A) may imply that //o// was delabialised in the first instance through dissimilation with an immediately preceding labial /f/. This would seem to be supported by the fact that Old Irish *foda* //o// is realised as /a/ in all Irish dialects. The frequent occurrence of the change in absolute word initial position may have arisen in lenited forms of words with intial *f-*, which could have given rise to a rule //o// → /a/ in words containining word initial //o//. The delabialisation of //o// appears to be as equally common following the velar stop /k/, the labial /b/, and /bC/ clusters.

If we consider the following consonantal environments for which the change //o// > /a/ is attested, we get the following results if we count the number of words for each environment in which the lowering to /a/ is attested:

Environments	**_d**	**_s**	**_l**	**_L**	**_r**	**_θ**	**_p**	**_g**	**_x**	**_n**
No. of words	1	4	4	3	8	2	2	2	1	1

Table 5A.11

This provides the following hierarchical ordering for the post consonantal environment in which lowering to /a/ takes place:

__ r >> __ l, s >> __ L >> __ θ, p, g >> __ d, x, n **(B)**

Combining results (A) and (B), we conclude that the optimal environments for the lowering of //o// to /a/ in Irish is:

C_x __ C_y C_x = f >> # >> k, b(C) C_y = r >> l, s >> L **(C)**

It is important to note that lowering to /a/ does not occur in all words containing the optimal phonological environments for the development //o// > /a/. Note that //o// has been retained in *cos, cosúil, (f)osgail* etc. This suggests that the development //o// > /a/, although clearly phonologically conditioned, has been to a certain extent lexically conditioned also.

//o// > /a/ / __ C'

The change //o// > /a/ is apparently not as common in the prepalatal position. This change is once again most common in Connacht and Ulster dialects, being apparently unknown in Munster dialects (to judge by the sources included for the purposes of the present study). The following table illustrates the development:

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**GT**	**TY**
croiceann[47]	e, o	e	**a**	**a**	**a**	**a**[48]	ɛ	a, e
cloigeann	--	--	e	e	**a**	**a**[49]	**a**	**a**
coirt	--	--	**a**	**a**	**a**	--	--	--
coidreamh	o	--	--	--	--	--	--	a
coigilt[50]	--	--	i	e	--	--	**a**, ɛ	e[51]
coisrigthe[52]	o	--	--	--	**a**	ɔ	ɔ	o
coiscéim	k'i	ə (PRT)	i[53]	--	o	**a**	**a**	**o**
*choinic	--	--	**a**, i	**a**	**a**	--	**a**[54]	**aN**
doiligh	--	--	e	e	e	**a**	o, ɛ[55]	o[56]
sloinneadh	i	--	--	**a**	**a**	i	i	i
goimh	--	i	**a**	**a**	ã	--	--[57]	o
doimhneas	e	i	--	--	ã	--	--	o

Table 5A.12

It follows that //o// > /a/ has been particularly common in the post velar position k, x __. The development also occurs following /L/ in *cloigeann* and *sloinneadh* and following /kr/ in *croiceann*. However, it is not clear if the development in these

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[47]/i/ also occurs in Munster, see Ó Sé (1982: 38).
[48][ɛ] GT.
[49]/a/ GT.
[50]/a/ realisations are common from mid-Connacht to Donegal.
See LASID points 51, 54, 57, 74, 75, 86. /e/ realisations e.g. LASID pt. 69 presumably represent later raisings of /a/. (Question 548).
[51]But /a/ *coigil* (vb).
[52]/a/ realisations are common in Connacht only according to the evidence in LASID II, III, IV, Q. 783, 795, at points 33, 38, 46, 54, 57.
[53]*coiscéim* > *coisméig* /kiʃm'e:g'/ GCF s.v. *coisméig*, ICF: 116.
[54]*chonnaic* > *channaic*, not *chainic*.
[55][ö], [ɛ] GT; Wagner reports /a/ for north Donegal.
[56]But /a/ *doilghe*.
[57]Cf. [ö] *goimhiúil* GT.

instances and in *doiligh, doimhneas* is to be explained in the same way as the lowering in the post velar position. It is possible that fronting to /e/ has led to /e/~/a/ variation which is common in the environment C __ C' generally. In this respect, we note that /e/, which is not the normal reflex of //o// in Munster dialects in the environment C __ C', occurs in *croiceann* (IWM, IR), *doimhneas* (IWM). We may also note /e/ in Connacht dialects in the words *cloigeann* (ICF, IT), *doiligh* (ICF, IT, IE). It could be argued that /e/ in such instances represents a secondary raising of /a/ lowered from //o//. The correlation between Munster and Ulster /i/, and Connacht /a/ in the words *sloinneadh, goimh* would seem to imply that the development //o// > /a/ in these instances represents a different development altogether. In particular, as we have suggested above, it implies that the change may have involved the intermediate stage of //o// > /i/, which is regular before palatalised nasals. It is worth noting that the monographs afford no examples of the lowering in the prepalatal position following labials.

A comparison of both tables 5A.8 and 5A.12 implies that the change //o// > /a/ in Irish may originally have begun in the post velar position and that this change had a northern locus of origin. The universal development of //o// > /a/ in Irish dialects in the word *foda* 'long' suggests that the change may have begun in the post-labial voiceless fricative position, or at least that the lowering occurred early in this position. O'Rahilly (1932: 192-3) overstates the extent of the change //o// > /a/ in southern dialects, quoting only *agus, fada, aifreann*. He notes that:

> From every dialect today examples of the change of *o* to *a* might be quoted; but some dialects favour this change more than others. In certain words *a* < *o* has established itself generally; compare *agus, fada, aifreann*, with O. Ir. *ocus, fota, oiffrend*. Southern Irish has been the most conservative, and has preserved *o* in a number of words in which it has been replaced by *a* in Northern Irish.

Agus is not an apposite example since it is an unstressed word, and the rules governing unstressed vowels are not the same as those which govern stressed vowels. *Aifreann* may not be a suitable example either, since, as a loan from Latin *offerendum*, the Irish form may derive from a form of vulgar Latin.[58] McManus (1982: 221) notes that 'Lat[in] /o/ in absolute Anlaut appears in Irish as *a*-' in a number of words, although he does not list *aifreann* here, but the examples he quotes involve Irish words where /a/ is followed by a non palatal. The Old Irish form *oifrend* (DIL s.v.) could well represent a learned borrowing, or alternatively its spelling could be based

[58]Cf. McManus (1982: 201-2) where a similar suggestion is made for other words, although not for *aifreann*.

on the Latin spelling of *offerendum* rather than reflecting phonological reality in vernacular Irish. This leaves *fada* as being the only certain example of the lowering of //o// to /a/ in southern Irish dialects, which we have discussed above.

The lowering of //o// to /a/ following velars can be explained as a result of the neutralisation of original //o// and //a// in this position. It is likely that //a// would have had back allophones when it occurred following velar segments, thus leading to merger with //o// whose allophones in this position would have been phonetically similar. However, it may be significant that the lowering of //o// to /a/ has occurred chiefly in dialects where the distinctive features of /a/ may be said to be synchronically [–front], [–back], especially in Donegal dialects. Cf. ScG dialects also. It is important to point out that the lowering of //o// to /a/ following velars has not occurred universally in the word class {//C[+velar]o//}; cf. /o/ *cos, cosúil* etc. We have noted that the change appears to be most common when //o// precedes the segments //s r l//. Could it be that //a// had non-back allophones in the environments C[+velar] __ s r l, thus leaving a gap in the mini-phonological space defined by the environment C[+velar] __ s r l, which tokens of //o// spread to fill? Further research on the nature of the phonological environments in which the change //o// > /a/ is attested in our historical written sources will no doubt shed some further light on the development.

The diphthongisation of //o// to /ai/ before the clusters /b'r'/ and /b'l'/ in southern Connacht dialects is to be noted. The diphthong /ai/ points towards the diphthongisation of a mid vowel /o/ or /e/ which is suported by the occurrence of /e/ in other Connacht dialects in these environments.

__ F[+voice] [+labial]

The non palatal labial fricatives //v ṽ// have been vocalised in all Irish dialects following original //o//. The vocalisation of intervocalic //v// following //o// has generally led to the coalescence of disyllables to monosyllables in all Irish dialects, with the exception of some Connacht dialects; for instance *gobha* is disyllabic in IT, IE. In Munster dialects palatal //v'// but not //ṽ'// has been vocalised. Palatal //v' ṽ'// have been retained when preceded by //o// in Connacht and Ulster dialects. Indeed the retention of //v' ṽ'// in Connacht and Ulster dialects (preceding //o//) forms an important isogloss separating Ulster and Connacht from Munster.

Although syllables containing //ṽ(')// and //ṽ(')// would originally have been differentiated by the feature [+/–nasalised], this system has not been retained in its entirety. Nasalisation has not been regularly maintained in words with original //ṽ// and //ṽ'// in Irish dialects generally. De Búrca (IT: 28) notes that nasality occurs only 'erratically under the influence of a former nasal (*mh*)'. The general tendancy in Irish dialects has been towards the loss of nasalisation. Mac an Fhailigh (IE: 48) notes for the mid vowels that 'instances of nasalised *e* and *o* are extremely rare'. See IWM: 54 ff., IR: 61 ff., ICF:46 ff., IT: 58 ff., IE: 48 ff., DD: 17 ff. for further details.

Despite the apparent loss of the feature [+/–nasalised] in //oṽ// sequences, the distinction between //ov// and //oṽ// sequences is still regularly maintained in Irish dialects as the following table illustrates:

	IWM	IR	ICF	IT	IE	DD	TY
obhV	ou	əu	au	əu-ə	əu-ə	o:	o:
obhC	--	--	--	--	--	--	--
omh	o:V,C	u:V,C	u:V,C	o: ~ u:V,C	o:, ð:V,C	o:, ð:V, C	o:, ð:V,C

Table 5A.13

The distinction is still retained in some cases by the presence of nasalisation in reflexes of //o// deriving from //oṽ// in some Donegal dialects. However, the nasalisation has not always survived, e.g. *comhairle* /ko:rL'ə/ is not nasalised in DD (:17). A clear pattern emerges from table 5A.13. The vocalisation of //v// in //ov// has led to the development of *u*-gliding diphthongs in Munster and Connacht dialects, whereas in Donegal long monophthongs are the norm. However, the vocalisation of //ṽ// in //oṽ// has led to the development of long monophthongs /o:/ and /u:/ in all Irish dialects.[59] The development of //ov// sequences in Munster and Connacht dialects is straight forward and can be described as:

//ov// >/ow/ > /ou/ = /au/ (ICF)

The development in Donegal of //ov// sequences is not so clear. There are two possibilities: (a) //o// may have been lengthened to /o:/ by compensatory lengthening with the vocalisation of //v//; (b) /o:/ may represent the smoothing of a *u*-gliding diphthong /ou/. These possiblities may be described as follows:

[59]The exceptions to this development are discussed below.

(a) //ov// > /ow/ > /o:/
(b) //ov// > /ow/ > /ou/ > /o:/

I have noted no instances of *u*-gliding diphthongs for original //ov// in Donegal dialects other than *lobh* (DD) and *cobhlach* (TY) which would lend weight to the second possibility. Unlike the situation described for //av//, //ev//, there does not appear to be a correlation between *u*-gliding diphthongs and disyllabic forms, and long monophthongs and monosyllabic forms (see section C, chapters 3, 4).

There are two possible explanations of the developments //oṽ// > /o:/, /u:/ in Irish: (a) //o// may have been lengthened to /o:/, /u:/ by compensatory lengthening with the vocalisation of //v//; (b) /o:/, /u:/ may represent the smoothing of a *u*-gliding diphthong /ou/. The universal development of monophthongs in all dialects would seem to suggest that the former is the more likely, with the possible exception of Donegal dialects where either explanation seems possible. If correct, the occurrence of /u:/ in Munster and Connacht dialects may imply that //o// was raised to /u/ prior to the vocalisation of //ṽ// which, as we have already noted, is common before nasals in Irish dialects. However, the raising of /õ:/ to /ũ:/ cannot be ruled out. Cf. //o:// > /u:/ in the vacinity of nasals in *mó, nós* (ICF: 86),

The contrasting developments of //ov// and //oṽ// can be explained by positing the reduction of //v// prior to the reduction of nasalised //ṽ//. That the later reduction of //ṽ// resulted in the lengthening rather than the diphthongisation of //o//, may perhaps have occurred in order to maintain a distinction between original //ov// and //oṽ// sequences, particularly in cases when such syllables were no longer differentiated by the feature [+/–nasalised], although this seems unlikely. Alternatively, the quality of the nasalised vowel //o// occurring before //ṽ// may have differed from that of //o// before //v//, perhaps representing a higher allophone of //o//; it is conceivable that relatively higher allophones of //o// may have been more likley to have been lengthened rather than diphthongised following the vocalisation of //ṽ//. This would imply the following developments:

//ov// → [ov] > [ow] > [ou] = /ou/
//oṽ// → [o̰v] > [o̰w] > [o̰:] = /õ:, o:/

There may have been no significant differences in the allophones of //o// in Donegal dialects, where both //ov// and //oṽ// yielded /o:/.

Significant minor developments

The development of *domhan* 'world' in all Irish dialects other than Donegal has not developed in the same fashion as original //oṽ// sequences. *Domhan* is usually realised with a *u*-gliding diphthong, thus reflecting the general development of original //ov//. This would seem to imply that nasalisation of //ṽ// was lost prior to the vocalisation of the labial fricative in this word. The loss of nasalisation in this word can be explained as dissimilation between the nasal segments //ṽ// and //n// or as a reassignment of nasality in the sequence //oṽən// to the final syllable //ən//, cf. our discussion of *deimhin, deamhan* in chapter 4, section C. A similar development has occurred in *domhain* 'deep', see map 13 based on LASID I: 109 where nasalisation is rarely attested. *Domhain* 'deep' is generally realised as /dəin'/ in Munster dialects and may be a back formation based on the oblique form *doimhne*. However, the fact that //o// is not diphthongised in *doimhne(eas)* in Munster dialects (IWM, IR) suggests that *i*-gliding diphthongs are to be derived from a form *doimhin* rather than a back formation based on the oblique form *doimhne*.

Comhartha 'sign' has in some Connacht and Donegal dialects become /kõhərə/ which may derive from a metathesised form **comhtharra*.

There are insufficient examples in the monographs to give a true and complete picture of the development of (i) //ov'// prevocalically and (ii) //oṽ'// preconsonantally. The following general statements can, however, be made, based on the following summary table:

	IWM	**IR**	**IC'F**	**IT**	**IE**	**DD**	**TY**
oibh	əiC'	əiC'	aiv'C'	ev'C'	ev'C'	iv'C'	--
oimh	eC', iv'V	iC', iv'#	aiv'C', ivV	ev'C', iv'V	iv'V,C'	iv'#, V[60]	iv'#, ov'V,C'

Table 5A.14

Following //o//, preconsonantal //v'//, //ṽ'// has been vocalised only in Munster dialects. Otherwise //v'// and //ṽ'// have been retained in all other positions following //o// in Connacht and Donegal dialects. //o// has been diphthongised to /əi/ (/ai/) before preconsonantal //v'// in Munster. Dipthongisation (/ai/) also occurs in ICF although in this case the fricative has been retained. In this environment /e/ is the norm in other Connacht dialects, /i/ in Donegal. Diphthongisation to /əi/ (/ai/) in IWM, IR, ICF points towards the diphthongisation of a mid vowel /o/ or /e/, rather

[60] *doimhne* etc. does not appear in DD. Cf. [dövn'ə] GT. [ö] = /e/?

than /i/ which would presumably have given /i:/ with lengthening before //v' ṽ'//.[61] This seems to be supported by the existence of mid vowels in most Connacht dialects in the position before //v' ṽ'//. Raising to /i/ is general in Irish dialects before //ṽ'// in the preposition *roimh*. However, //o// > /e/ is also attested, e.g. *doimhne(as)* (IWM) where we might expect /i/. We have already drawn attention the lowering of //o// to /a/ preceding //ṽ'// in some Connacht dialects, e.g. *goimh* (IT), *doimhneacht* (IE).

__ F[+voice] [+dental]\[+velar]

The velar fricative has been vocalised in all positions following original //o// in Irish dialects. The development of //oð(')/ɣ(')// in Irish dialects is summarised in the following table:

	IWM	IR	ICF	IT	IE	DD	TY
oð/ɣV#	ou	əu	au[62]	əu-ə	əu-ə	--	--
oð/ɣVC	ou	əu	au	əu-ə	əu	o:	o:
oð/ɣC	ou	əu	o:	o: (o:~u:)	o:	ɔ:[63]	o:
oið'/ɣ'	əi	əi	ai	əi	əi	əi	e:

Table 5A.15

The vocalisation of //ð'/ɣ'// has resulted in the development of *i*-gliding dipthongs in all Irish dialects except Donegal where /e:/ is the norm. It is not clear whether or not Donegal /e:/ in such cases represents the smoothing of an *i*-gliding diphthong. Turning now to the development of //oð/ɣ//, there are two major developments in Irish dialects: (a) the development of *u*-gliding diphthongs in Munster and Connacht and (b) the development of long monophthongs, usually /o:/ but somtimes /u:/ in Connacht and Donegal. Three different dialect types emerge which may be described as follows:

	oð/ɣV	oð/ɣC[−nas]	oð/ɣC[+nas]
Munster	əu	əu	əu
Connacht	əu	o:	o:, u:
Donegal	o:	ɔ:	o:

Table 5A.16

[61] I have noted no examples of //oṽ'C'// from IR where *i*-gliding diphthongs have developed. Had such developed, we might expect /ai/ rather than /əi/.

[62] *togha* GCF.

[63] Only attested for words containing original //ɣ// e.g. *doghrainneach, foghlaim*. I have not included /o:/ *bodhraigh* (vb) which is no doubt based on /o:/ *bodhar*. If it were not based on *bodhar*, it would imply a difference of development of //o// before the segments //ð// and //ɣ// which is perhaps unlikely. Compare the regular development of *bodhar* /au/ and *bodhrán* /o:/ in ICF.

At the extremeties of the Irish-speaking area, the development of //o// is the same before prevocalic and preconsonantal //ð/ɣ//, i.e. diphthongisation occurs in Munster, and lengthening to /o:/, /ɔ:/ in Donegal. Connacht is mixed in this respect since both developments occur, although the occurrence of each is conditioned by the phonological environment: Diphthongs occur when //o// precedes prevocalic //ð/ɣ//, monopthongs occur when //o// precedes preconsonantal //ð/ɣ//. The development of *u*-gliding diphthongs can be described follows:

//oð/ɣ// > /ouɻ/ > /ou/ = /əu/

However, the development of monophthongs is not so certain. There are two possibilities: (a) //o// may have been lengthened to /o:/, /ɔ:/, /u:/ by compensatory lengthening with the vocalisation of //ð/ɣ//; (b) /o:/ may represent the smoothing of a *u*-gliding diphthong /ou/. Recall that rule 3A, discussed in chapter 3, would support the latter interpretation, whereby the vocalisation of /ɣ/ (< //ð/ɣ//) following //o// would have yielded a /w/ glide.

/uɻ/	→	/w/	/ V[+back][+round] __	Rule 3A
	→	/j/	/ V[–back] __	

This implies an intermediate stage of /ow/ (still seen in Munster and Connacht dialects). The occurrence of /u:/ for //oɣ/ð// occurs only in words of the shape //oð/ɣC[+nas]//, which may be a case of /o:/ raising in a nasal environment, cf. *mó* /u:/, *nós* /u:/ (ICF: 86).

The Connacht evidence provides us with a useful and important insight into the reduction of disyllables to monosyllables.

	ICF	**IT**	**IE**
oð/ɣV#	au	əu-ə	əu-ə
oð/ɣVC	au	əu-ə	əu

Table 5A.17

Table 5A.17 suggests that there is an implicational relationship between the environments __ V# and __ VC for the reduction of original disyllables (containing prevocalic //oð/ɣ//) to monosyllables in Connacht dialects, which may be expressed as follows:

__ V# ⇒ __ VC

In other words, if reduction takes place in words of the shape //(C)oð/ɣV#//, then reduction will also take place in words of the shape //(C)oð/ɣVC//. This suggests that the reduction of disyllables (containing //oð/ɣ//) to monosyllables may have occurred in two stages in Connacht, and by implication, perhaps in other Irish dialects also. In particular, disyllables may have been first reduced to monosyllables when the coda of the second syllable was a consonant, i.e. in words of the shape (C)V-əC, where - indicates the juncture between two syllables formerly occupied by a fricative. This development can be explained as the interpretation of [ə] as an on-glide to the final C. The second stage in the reduction of disyllables affected words whose second syllable did not have a consonantal coda, i.e words of the shape (C)V-ə. The development can be explained as the interpretation of [ə] as an off-glide from the preceding vowel. This suggests the following rules and ordering for the reduction of disyllables in Irish:

(1) F → ∅
(2) (C)V-əC → (C)V^{ə}C = /(C)VC/
(3) (C)V-ə# → (C)V^{ə} = /(C)V/

Stage (1) is reflected in IT where disyllables have been retained. Stage (2) is seen in IE and stage (3) in seen in ICF. The occurrence of monosyllabic and disyllabic reflexes of *bodhar* are set out in map 14, based on LASID I: 122.

The evidence of DD suggests at first glance that the development of //o// may have been different when //o// preceded //ð// and //ɣ//. Compare /o:/ in *bodhar, bodhraigh, odhar* with /ɔ:/ in *foghlaim, doghrainneach*. However, this apparent difference in development is more likely to reflect a difference of development of /oɣ/ (< //oð/ɣ///) according to phonological environment. The occurrence of /o:/ in *bodhraigh* (vb) can be explained as being based on *bodhar* where /o:/ is expected. Having explained the occurrence of /o:/ in *bodhraigh*, the distribution between /o:/ and /ɔ:/ appears to be phonologically conditioned as outlined below:

/oɣ/ → /o:/ / __ V	*bodhar, odhar*
/oɣ/ → /õ:/ / __ C[+nas]	*foghmhar*[64]
/oɣ/ → /ɔ:/ / __ C	*foghlaim, doghrainneach*

This suggests that //o// may have been lengthened to /ɔ:/ without an intermediate diphthongal stage when //o// preceded preconsonantal /ɣ/ (not /ɣC[+nas]/). The

[64]Cf. *foghnamh* /o:/ TY.

occurrence of /o:/ when //o// preceded prevocalic /ɣ/ suggests (a) that /o:/ may represent the smoothing of a *u*-gliding diphthong or (b) that /o/ may have had higher allophones in the environment __ ɣV. The distinction between /o:/ and /ɔ:/ reflexes of //oð/ɣ// does not appear to hold true for TY.

Minor developments

The most significant minor development occurs in Donegal dialects where //o// has been unrounded and lengthened to /ʏ:/ in DD and to /e:/ in TY before intervocalic and preconsonantal //ɣ//. The word class which illustrates this development is well defined and restricted to derivatives of the morphemes {*togh(a)*} and {*rogha*}. Compare DD /ʏ:/ in the words *togha, toghaim* (PRES 1 sg), *roghnachas* with TY /e:/ *togha, togh(adh)* (vb), *toghna, rogha*. We may also compare the unrounding to /ʏ/ before word final //ɣ// in *togh* (vb) DD. Since these divergent developments reflect the expected development of //aɣ// sequences, it can be inferred that //o// was lowered to /a/ prior to the vocalisation of //ɣ// in Donegal dialects.[65] This is supported by the historical variants *rogha ~ ragha, togha ~ tagha*, see DIL s.v. *rogu, toga*.[66] The non-lowering of //o// to /a/ in *foghlaim* in the light of lowering in *rogha, togha* is noteworthy. Cf. ScG discussed below.

__ SON#\+C[+hom]

Lengthening and diphthongisation of //o// before sonorants is generally only found in Munster and southern Connacht dialects although lengthening does occur before //R, rC// in Donegal dialects.[67] Before //R, rC[+voice]// lengthening occurs in Munster (/o:/) and Donegal (/ɔ:/) but diphthongisation occurs in southern Connacht dialects (ICF /au/). Otherwise original //o// has been retained in other Connacht dialects before //R, rC[+voice]//. However, in Connacht dialects where //o// is retained before //rC[+voice]//, and in Donegal, //o// is lengthened to /o:/ before //rC[–voice]// frequently in the words *ortha, doirt, dortadh*. It is worth noting that lengthening of //o// before //rC[–voice]// is unknown in Munster dialects, as the following table illustrates:

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[65]This is also suggested by Hamilton (TY: 131) although he is surely incorrect in deriving /e:/ *foighide* from *faighide*. Cf. also //o// > /e:/ *rodharc* > *radharc*. O'Clery's Irish glossary has *'raegha* i. *togha'*, which suggests an underlying [E:], see DIL s.v. *rogu*, column 90, line 1.

[66]Lowering of //o// to /a/ before /ɣ/ may be further evidence for the partial merger of original //o// and //a// in the vacinity of velars. Cf. //o// > /a/ / k __ discussed above.

[67]I have not noted any instances of //o// before //R// in IT, IE.

	IWM	IR	ICF	IT	IE	DD	TY
dortadh (vn)	o	--	--	o:	o:	ɔ:	
doirt (vb)	o	--	o	--	o:[68]	--	ɔ(:)[69]
ortha 'charm'	--	--	--	o:	--	--	ɔ:

Table 5A.18

Lengthening of //o// before //rC[–voice]// appears to be lexically conditioned[70] as the following pairs illustrate:[71]

	V	V:
IT	goirt, gortach /o/	dortadh /o:/
IE	gort, gortach, gorthughadh /o/	dortadh, doirt /o:/
DD	gortughadh, toirt, portach /ɔ/	dortadh /ɔ:/
TY	gort, goirt, gorta(ch), gortaigh /ɔ/	doirt /ɔ(:)/

Table 5A.19

Reflexes of original //o// have not been lengthened in most Connacht and Donegal dialects before the segments //L N M L' N' M'//.[72] However, diphthongisation and lengthening occur in Munster and southern Connacht dialects (ICF) before these segments. In Munster before non-palatal //L N M// and in south Connacht before //L// dipthongisation (*u*-gliding) occurs. In south Connacht lengthening to /u:/ occurs before the nasals //N M//. This presupposes the raising of //o// to /u/ prior to the lengthening which is the general development in other Connacht dialects before //N M//. Raising to /i/ in Donegal, to /i:/ with lengthening in Munster are the regular reflexes of //o// before //L' N' M'// in these dialects. Raising to /i/ in Connacht only occurs before the nasals //N' M'//. Otherwise in Connacht //o// is fronted to /e/ before //L'//. Diphthongisation of //o// before //L'// in ICF presupposes that //o// was not raised to /i/ but retained as a mid vowel when diphthongisation took place. This accords with the general development of //o// in Connacht in the environment __ C, C ≠ F[+voice], SON.

The development of //o// before the palatals //L' N' M'// in IR is quite different to that in IWM. The development to /i:/ presupposes that //o// was raised to /i/ prior to the lengthening of short vowels before sonorants in IWM. It is not immediately obvious

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[68]*doirte* verbal adjective.

[69]/ɔ/ *doirt* (vb, IMP) but /ɔ:/ *doirte* verbal adjective.

[70]It is difficult to see why a preceding /d/ should induce lengthening when a preceding /g/ does not. The fact that lengthening appears to occur only in this word and its derivatives suggests that the lengthening is lexically conditioned.

[71]It is worth noting that inflected //o// > //u// is lengthened in Munster but apparently not in Donegal. Cf. IWM /u:/ *uird*, pl of *ord* and DD /o/, /i/ *uird*, pl of *ord*; /i/ *duirn*, pl of *dorn*.

[72]Some instances of lenthening to /o:/ (not /ɔ:/) do occur before //N// in Donegal, e.g. *sonntach, sonnrú, sonnraidheach*, in which case the effacement of //N// is usual. Note also that lengthening does, however, occur before //R// in Donegal.

from the *i*-gliding diphthongal reflexes of //o// in IR that raising to /i/ also occurred in this dialect. I claim that such raising did in fact take place. A comparison of the development of //i// in the words *cill, binn, im* in IR confirms that the development of //o// before palatals is the same: compare /əi/ *cill* with /əi/ *soillse*, /ai/ *binn, im* with /ai/ *broinn*.

Section B
Development of //o// in ScG

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //o// is generally realised as a low back rounded vowel /ɔ/ before palatals and non palatals in all ScG dialects in most environments other than before fricatives and sonorants although there is a greater propensity for a higher more round vowel /o/ to occur in some peripheral dialects e.g. GA, GK, ESG. The most significant (minor) developments of //o// have been: (a) raising to /o/, (b) raising to /u/, (c) lowering and unrounding to /a/, (d) unrounding to /ɤ/ (or /e/~/ɸ/). Before non palatals, (a), (b) and (c) occur. Before palatals, (a) and (d) occur. We begin by considering developments of //o// before non palatals.

//o// > /o/, /u/

Table 5B.1 illustrates the environments and words in which //o// has been raised to /o/ and /u/.

//o// > /o/, /u/

	GL	DOH	S	R	GK	GA	ESG	EPG
bog	**o**	**o**	**o**	**o**	**o**	--	**o**	**o**
boc	--	--	**o**	**o**	**o**	--	--	ɔ
bodach	ɔ	ɔ	--	ɔ	**o**	**o**	ɔ	o
bothan	--	--	--	--	--	ɔ	**o**	**o**
gob	**o**	**o**	--	**o**	--	--	**o**	**o**
coma	**o**	**o**	**o**	--	--	--	**o**	**o**
connadh	**o**	--	**o**	--	--	--	--	ɔ[1]
coltach/s	ɔ	--	**o**	--	--	--	--	ɔ
cogadh	ɔ	ɔ	ɔ	ɔ	--	**o**	--	ɔ
copag-	--	--	--	ɔ[2]	**o**	**o**	--	ɔ
chonnaic	**u**	**u**	**u**	**u**	**ɔ,o,u**[3]	**u**	**ũ**	**o**
cromadh	--	--	**o**	--	--	-	--	**o**[4]
croman	ɔ̃	--	--	**o**	--	--	--	--
dol	ɔ	--	ɔ	**u**	**o**	**o**	**u**	ɔ
Donnchadh	**u**	**u**	--	**u**	--	**o**	--	ɔ
follaiseach	--	--	**o**	**o**	--	--	--	--
fosgailte	ɤ	ɔ, ɤ[5]	--	**o**	**o**	**o**	**o**[6]	**o**
fochann	--	--	--	--	--	**o**[7]	ɔ[8]	--

[1]Also /ɔə/.
[2]*cop* 'foam'.
[3]/ɔ/ So; /o/ La; /u/ La.
[4]Crom 'crooked'.
[5]/ɔ/ Ha; /ɤ/ Ba.
[6]*foisg* 'open'.
[7]'blades'.
[8]'sprouts in eyes of potatoe'.

	GL	DOH	S	R	GK	GA	ESG	EPG
folt	a	a	a	a	--	--	**o**, a[9]	ɔ, a[10]
losgadh	ɔ, **ɯ**	ɤ[11]	--	**o**	--	**o**	**o**	**[o]**
loch	ɔ	ɔ	--	ɔ	**o**	**o**	ɔ	ɔ
loth	--	ɔ	--	--	**o**	**o**[12]	--	ɔə[13]
long	--	**o**	ɔu	--	**o**	**o**	əu:	--
Nollaig	--	ɔ	ɔ	--	**o**	**o**	--	o[14]
moch	**o**	--	--	**o**	--	--	**u**	**u**[15]
moladh	õ	ɔ	--	--	**o**	--	ɔ	ɔ
motha	**u**	ɔ, **u**[16]	ɔ,**o**[17]	**u**	ɔ	ɔ	ũ	**o**
mothachadh	**o**	**u** (Ba)	--	--	ɔ:[18]	ɔ,ɔ:[19]	--	--
mosach	õ	ɔ	--	--	--	--	--	**u~o**
obair	**o**	**o**	**o**	**o,u**[20]	--	**o**	**u**, i	**o**, ɔ
ochd	**o, u**	ɔ	ɔ	**o**	**o**	**o**	**o**	**o**
toba(i)r	**o**	**o**	**o**	**o**	--	--	--	**o**
*tog[21]	**o**	**o**	--	**o**	**o**	**o**	**o**[22]	**o**, ɔ[23]
togair	**o**	--	--	--	--	--	--	**o**
solas	ɔ	ɔ	ɔ	ɔ	**o**	**o**	ɔ	ɔ

Table 5B.1

Table 5B.1 is analysed in the following table and chart as follows:

	GL	DOH	S	R	GK	GA	ESG	EPG
No. Returns	26	23	18	22	17	20	20	30
No. /o/	11	7	9	12	15	16	9	17
%	42	30	50	55	88	80	45	57
No. /u/	4	4	1	5	1	1	5	2
%	15	17	6	23	6	5	25	7

Table 5B.2

---

[9]/o/ B, G; /a/ E.
[10]/ɔ/ EF; /a/ MS, JM.
[11]*loisg*.
[12]*lothag* /Loxag/.
[13]*lotha*.
[14]*An Ollaig* < *an Nollaig*.
[15]*mochthrath*.
[16]/ɔ/ Ha; /u/ Ba.
[17]/ɔ/ Km, Br; /o/ AV.
[18]*mothachainn*.
[19]*mothachainn*.
[20]/o/ RP, Dr; /u/ Ault, Cg.
[21]*tog* < *tóg*.
[22]*trogail*.
[23]/o/ MS, AD; /ɔ/ JM.

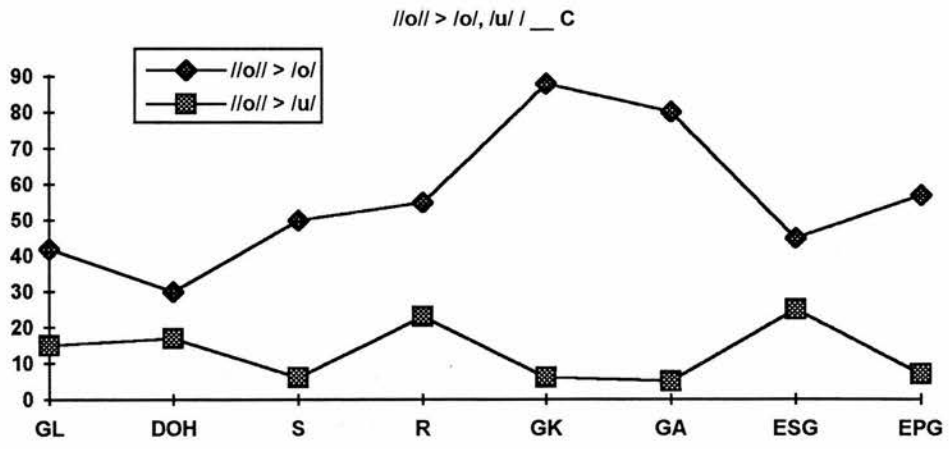

Chart 5B.1

As might perhaps be expected, raising to /o/ is more common than raising to /u/ in all dialects. Raising to /o/ is clearly most common in the dialects of GK and GA, where interestingly, raising to /u/ is least common.

If we count the number of dialects for which /o/ is attested as a reflex of //o// for each of the words listed in table 5B.1 above, we get a rough idea of the phonological environments in which raising to /o/ has most frequently taken place. We get the following results:

Words for which the change //o// > /o/ is attested	No. of dialects with /o/ in these words
--	8
bog, tog	7
obair, ochd	6
gob, coma, fosgailte, toba(i)r	5
losgadh	4
boc, bodach	3
bothan, connadh, copag, chonnaic, cromadh, dol, follaiseach, loch, loth, long, Nollaig, motha, togair, solas	2
coltach, cogadh, croman, Donnchadh, fochann, folt, moch, moladh, mothachadh, mosach	1

Table 5B.3

We conclude that raising to /o/ is most common in the following environments:

b, t __ g
#, g, t __ b
__ xg
k __ m
f, L __ s

Raising to /o/ is most common preceding velar (/g x/) and labial (/b m/) segments and is particularly common in the environments C[+vel] __ C[+lab] and C[+lab] __ C[+vel], e.g. *gob, coma, bog*. Raising is, however, also common before /s/ when //o// is preceded by the segments /f L/. We note that //o// > /o/ occurs frequently in GK, GA following /L/, e.g. *losgadh, loch, loth, long* which usually corresponds to /ɔ/ in other dialects.[24] We will see below that /o/ is also the common reflex of //o// in ScG before the segments //L N M//, especially in those dialects where lengthening or diphthongisation does not occur before sonorants, e.g. GK, GA, EPG. It follows that labial and particularly velar and velarised segments (i.e. /L N M/) have been the main contributing factors in the raising (and further rounding) of //o// in ScG dialects. Given the optimal environments for the development //o// > /o/ in ScG discussed above, it is worth noting that raising does not usually take place in *cogadh* (but see GA), where we might expect it.

A numerical analysis of the occurrence of /o/ for original //o// according to preceding and following consonantal environment provides the following results (the numbers in brackets indicating the number of words in table 5B.1 for which the development occurs in that environment):

Preceding consonantal environment:

k, m (5) >> b, f, L (4) >> t (3) >> kr, d, # (2) >> g, x, N, s (1) **(A)**

Following consonantal environment:

g (4) >> θ, m, N, L, s, x (3) >> b, l (2) >> k, d, p, ŋ, (hiatus) (1) **(B)**

The results of (A) and (B) provide the following optimal environments for the raising of //o// to /o/ in ScG:

C_x __ C_y C_x = k, m >> b, f, L, t; C_y = g >> θ, m, N, L, s, x **(C)**

[24]Cf. /o/ in *dol* also in GK, GA.

//o// >/u/

Raising to /u/ is almost universal before //N// in the words *chonnaic, Donnchadh* and also before /ŋ/ in *long*.[25] It also occurs in some dialects following the labial nasal /m/ in *moch, motha, mothachadh* and before the labial /b/ in *obair*.[26] It is significant that raising to /u/ occurs only (a) in the environment of nasals and (b) in those environments which are favourable to the raising of //o// to /o/. Raising to /u/ does not apparently occur in the environment m __ C[+voice].

//o// > /a/

Table 5B.4 illustrates the environments and the words in which the change //o// > /a/ has taken place in ScG dialects.

//o// > /a/ ScG[27]

	GL	DOH	S	R	GK	GA	ESG	EPG
bolg	**a**	**a**	--	--	--	**a**[28]	--	**a**
cos	**a**	**a**	**a**	**a**	**a**	ɛ	**a**	**a**
codal	**a**	**a**	[a]	[a]	**a**	[a]	--	**a**
cognadh	**a**	**a**	--	--	--	--	--	--
cogar	--	--	--	--	**a**--	--	--	**a**[29]
cogailt	**a**	--	--	--	--	--	--	--
colman	**a**	--	--	ɔ	[a]	--	--	**a**, ɔ[30]
Colum	**a**	**a**	[a]	[a]	[a]	--	--	**a**
colbtha	**a**	**a**	**a**	**a**	--	--	--	--
Collain[31]	**a**	--	--	--	o	--	--	--
clocha	**a**	**a**	**a**	**a**	**a**	**a**	ɔ	**a**
crothadh	--	**a**	--	--	--	**a**, ɛ	[a]	--
doras	**a**	ɔ	ɔ	ɔ	--	ɔ	**a**[32]	ɔ
foda	**a**	**a**	**a**	**a**	**a**	ɛ	**a**	**a**
focal	**a**	**a**	**a**	ă, ɛ̃	**a**	ɛ	ɔ	**a**
fola[33]	**a**	**a**	[a]	**a**	**a**	**a**	--	--
folamh	**a**	**a**	**a**	**a**	--	--	ɔ	**a**
folach	**a**[34]	**a**	--	--	[a]	**a**	--	**a**
follain	**a**	**a**	--	--	--	--	--	**a**
folt	**a**	**a**	**a**	**a**	--	--	**a**, o[35]	**a**, ɔ[36]

[25]Except in those dialects in which diphthongisation of //o// occurs before //ŋ//, e.g. *long*.
[26]Perhaps originating in sandhi when preceded by the article *an*.
[27]Square brackets in this table mean a phonetic transcription is not provided in the source but the given value is implied.
[28]'belly'. *Bolg* normally means 'bellows' in ScG.
[29]*cogaraich*.
[30]/a/ 'woodpigeon'; /ɔ/ 'homepigeon'.
[31]In *Oidhche Chollain* 'Hallowe'en'.
[32]/a/ *doras*; /ɔ/ *doirsean*.
[33]G sg of *fuil*.
[34]But /a/, /ɔ/ *dh'fholaich*.

	GL	DOH	S	R	GK	GA	ESG	EPG
fomhair	**a**	ũa[37]	ũa	--	ɔ	**a**	--	ã[38]
formad	**a**	ɛ(Ba)	--	--	--	--	--	**a**
fosgadh	**a**	**a**	--	--	[a]	--	**a**	**a**
fros	**a**	**a**	--	--	--	ɛ	**a**	**a**
gol	**a**	**a**	--	--	--	--	--	**a**
lorg	**a**	--	--	--	--	ɔ	--	ɔ
mora[39]	**a**	**a**	[a]	**a**	--	ɛ	ɔ	**a**
ochlais	**a**	--	--	--	--	ɛ	ɔ[40]	**a**

Table 5B.4

We can analyse table 5B.4 as follows:[41]

	GL	DOH	S	R	GK	GA	ESG	EPG
No. Returns	26	22	13	13	13	15	12	22
No. /a/	26	20 (19)	11	11	11	13 (7)	7	20
%	100	91	85	85	85	87	58	91

Table 5B.5

It follows that, with the exception of ESG, to be discussed presently, lowering to /a/ has occurred to roughly the same extent in all ScG dialects although lowering to /a/ appears to be most common in Lewis. The relatively low number arrived at for ESG could be increased to 100% if we include instances of /ɔ/ which may in any case represent a secondary raising of /a/. It is significant that /ɔ/ occurs in environments which consist of the labials /f m/, velars /k x/, and velarised /L/, particularly in combinations of these environments, e.g. #, kL __ x; f __ k; f __ L; m __ r. The raising of original //a// to /ɔ/ (e.g. in in *talamh, falbh, blas* ESG) in similar environments supports the suggestion that that /ɔ/ < //o// in the environments enumerated above represents a secondary raising of /a/ originally lowered from //o//.

If we consider the environments in which lowering to /a/ takes place, beginning with the preceding consonant, we get the following statistics based on table 5B.4:[42]

---

[35]/a/ E; /o/ B, G.
[36]/a/ MS, JM; /ɔ/ EF.
[37]Fricative retained in Ha, not Ba.
[38]Fricative retained.
[39]G sg of *muir*.
[40]*ochlas*.
[41]I interpret instances of /ɛ/ as a secondary raising of /a/. Numbers in round brackets refer to the number of occurrences of /a/, not counting instances of /ɛ/.
[42]In the following I have interpreted instances of /ɛ/ as a secondary raising of /a/ < //o//. Where /ɛ/ occurs therefore, I have counted it as an instance of the lowering of //o// to /a/.

	b_	f_	fr_	m_	k_	kr,kL_	g_	L_	#_	d_
Returns	4	56	5	7	36	11	3	3	4	7
/a/	4	51	5	6	35	10	3	1	3	6
%	100	91	100	86	97	91	100	33	75	86

Table 5B.6

Taking 90% as the cut-off point we see that lowering to /a/ has occurred most consistently following labials /b f fr/ and velars /k g kr kL/. The lowering has been least common following /L/, /d/ and /m/, and in absolute initial position. If we consider the number of lexemes in table 5B.4 for which lowering to /a/ is attested in each of the above environments, we get a clearer picture of the environments in which the change has occurred most frequently:

Environments	b_	f_	fr_	m_	k_	kr, kL_	g_	L_	#_	d_
No. of words	1	10	1	1	9	2	1	1	1	1

Table 5B.7

This provides the following hierarchical ordering for the lowering of //o// to /a/ in ScG:

f (10) >> k (9) >> kr, kL (2) >> b, fr, m, g, L, #, d **(D)**

If we consider the following consonantal environment, we get the following results when we count the number of words occurring in table 5B.4 in which lowering to /a/ takes place for each environment:

Environments	_l	_lC	_L	_s	_d	_g	_x	_θ	_r	_rC	_k	_ṽ
No. of words	5	4	2	3	2	3	2	1	2	2	1	1

Table 5B.8

This provides the following hierarchical ordering for the most favourable following consonantal environment in which lowering to /a/ occurs:

__ l (9) >> r (4) >> s, g (3) >> L, d, x (2) >> θ, k, ṽ (1) **(E)**

Combining results (A) and (B), we thus conclude that the optimal environment for the lowering of //o// to /a/ in ScG is:

C_x __ C_y C_x = f >> k, C_y = l >> r >> s, g **(F)**

Lowering of //o// to /a/ occurs only rarely in the prepalatal position in ScG. It is attested in certain reflexes of the lexemes *croiceann* (Ba, S, GK, ESG), *broilleach* (GL), and *cloigeann* (EPG):

	GL	DOH	S	R	GK	GA	ESG	EPG
croiceann	**ak**	ɛx'k'	ɛx'k'	**axk**	**ak'**	**ak'**	**ak'**	**ax'k'**
broilleach	**aL'**	--	--	ɔL'	--	oL	--	ɤl(j)
cloigeann	--	--	--	--	--	--	--	**a**[43]

Table 5B.9

Fronting to /ɛ/ occurs particularly following /s/ in *soitheach, soilleir*. While it is possible that /ɛ/ represents a secondary raising of /a/ < //o//, it seems more likely that /ɛ/ in such instances reflects a fronting of /ɤ/ < //o//, see below.

//o// / __ C'

We now turn our attention to the various (minor) developments of //o// in the prepalatal environment. The raising of //o// to /o/ is illustrated in the following table 5B.10:

//o// > /o/ / __ C'

	GL	DOH	S	R	GK	GA	ESG	EPG
bois	ɔ	--	**o**	**o**	**o**	**o**	--	**o**
boireannach	ɔ	**o**	ɔ	**o**	--	**or**	**u**	**o**
boin[44]	--	**o**	--	--	--	--	--	--
broilleach	**aL'**[45]	--	--	ɔL'[46]	--	[**oL**][47]	--[48]	**ɤl(j)**
cois	ɔ	ɔ	**o**	**o**	**o**	**o**	--	**o**
coisich/chd	ɔ	--	**o**	**o**	--	ɔ[49]	**o**[50]	ɔ
coinnich	ɤ[51]	--	--	--	--	--	--	ɤ
coigreach	--	ɔ	--	--	--	--	**oi**	ɔ
doilich	**u**	**ɯ**	**u**	--	**o**	--	**u**	**u**
fois	--	--	**o**	**o**	--	--	--	--
foithne[52]	--	--	--	--	--	**o**	**o, u**[53]	--
loisg-	**ɯ**	ɤ	--	--	--	**o**	**o**	--
oibrich	**o**[54]	--	--	--	**e**	**e**	--	**ɛi, e**
sgoilt	ɤ	--	--	--	--	--	**o**	--
soilleir	ɤ	ɔ (Ba)[55]	ɤ	ɤ	--	**o**	--	ɤ

Table 5B.10

---

[43]'skull'.
[44]D of *bó* 'cow'.
[45][öL':], [ö:L':] LASID IV, Lewis, Q. 476, 477.
[46][ɔL] LASID IV, Wester Ross, Q. 476, 477.
[47][ǫL] LASID IV, Arran, Q. 476, 477.
[48][aL'] LASID IV, Sutherland, Q. 476, 477.
[49]The distribution between /o/ in *cois* and /ɔ/ *coiseachd* in Arran suggests that the number of syllables in a word may affect the development in some cases. Here the 'tense' vowel occurs in the monosyllable and the 'lax' vowel occurs in a related disyllable.
[50]*coisidheachd.*
[51]/o/ Eoropie, Lewis, DOH.
[52]'wart'; Cf. *faithne* Irish.
[53]/o/ E; /u/ B, G.
[54]*oibreachadh* > *obrachadh*?
[55]/ɤ/ *soilleiricheadh*, GUD.

Table 5B.10 can be analysed as follows:

	GL	DOH	S	R	GK	GA	ESG	EPG
No. Returns	11	7	7	7	4	9	7	10
No. /o/	1	2	4	5	3	7	5	3
%	9	29	57	71	75	78	71	30

Table 5B.11

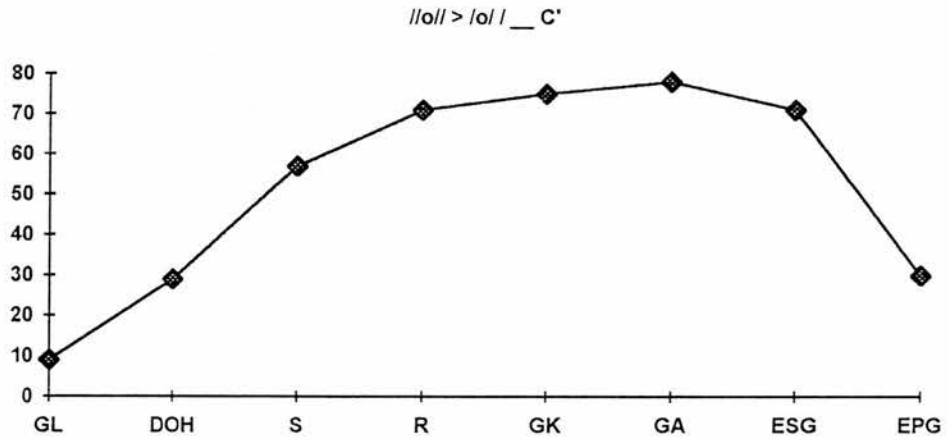

Chart 5B.2

The occurrence of /o/ for //o// in the prepalatal position shows a slightly different pattern to its occurrence before non palatals, see chart 5B.1 above. However, there is some agreement: the highest concentration of /o/ realisations is still to be found in GA, GK. If we analyse the environments for the change according to the preceding and following consonants, we get the following results:

Environments	b_	br_	k_	d_	f_	L_	#_	sg_	s_
No of words	3	1	4	1	2	1	1	1	1

Table 5B.12

Environments	_ʃ	_r'	_n'	_N'	_L'	_g'	_l'	_θ'n'	_b'
No of words	5	1	1	1	3	1	1	1	1

Table 5B.13

Tables 5D12-3 provide us with the following optimal environments for the raising of //o// to /o/ in the prepalatal position:

C __ C' C = k >> b >> f; C' = ʃ > L' **(G)**

This concurs with the conclusion reached above for the optimal environment for the raising of //o// to /o/ before nonpalatals:

C_x __ C_y C_x = k, m >> b, f, L, t; C_y = g >> θ, m, N, L, s, x **(H = C)**

We may conclude from (G) and (H) above that the optimal preceding consonantal environments for the raising of //o// to /o/ in ScG, irrespective of the following consonantal environment, is

C = k > b > f. **(I)**

At this stage, it is be useful to note that original //o// has generally been retained usually as /ɔ/, but also as /o/, before certain palatals, particularly before the segments //r' l' n' ʃ t'//, as the following table illustrates:

	GL	DOH	S	R	GK	GA	ESG	EPG
__ r'								
oir	ɔ	ɔ[56]	--	--	--	--	--	--
coire[57]	ɔ	ɔ	ɔ	ɔ	or	ɔ	ɔ	--
coirce	ɔrk	ɔ	--	--	o	o	o	ɔ
boireannach	ɔ	o	ɔ	o	--	or	ɔ[58]	o
__ l'								
toil(ichte)	ɔ	ɔ	ɔ	--	ɔ	ɔ	--	ɔ
sgoil	ɔ	ɔ[59]	ɔ	ɔ	--	ɔ	ɔ	ɔ
coin	ɔ̃	ɔ	ɔ	ɔ	ɔ	ɔ	--	ɔ
__ ʃ								
cois	ɔ	ɔ	o	o	o	o	--	o
coiseachd	ɔ	--	o	o	o	ɔ, o	--	ɔ
bois	ɔ	--	o	o	o	o	--	o
fois	--	--	o	o	--	--	--	--
oisein	ɔ	ɔ	--	--	o	o	o	ɔ
toiseach	ɔ	ɔ	--	ɔ	--	o	--	ɔ
oitear	ɔ	--	ɔ	--	--	--	ɔ	--
toit	--	ɔ	--	--	--	--	--	--

Table 5B.14

[56]In *oircein*.
[57]'kettle etc'.
[58]/ɔ/ B,G but /u/ E.
[59]GUD.

//o// > /u/, /ɯ/ / __ C'

Raising of //o// to /u/, /ɯ/ is illustrated in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
boireannach	ɔ	o	ɔ	o	--	or	**u**	o
*boin- (vb)	**u**	--	--	--	ɔ	ɔ	**u**	**u**
doilich	**u**	**ɯ**	**u**	--	o	--	**u**	**u**
foithne[60]	--	--	--	--	--	o	o, **u**[61]	--
loisg-	**ɯ**	ɤ	--	--	--	o	o	--
*loingeas	**u**[62]	--	--	--	--	--	--	ɔ̃i[63]
sloinneadh	**ɯ̃**[64]	--	--	ɤ	--	e~ø	--	--

Table 5B.15

If we leave aside *doilich* which may derive from original //u// rather than //o// in most dialects,[65] raising to /u/, /ɯ/ occurs most commonly in GL and ESG. In GL raising appears to be quite common following /L/, e.g. *loisg, sloinneadh, loingeas.*[66] Raising which is common in nasal environments may explain the raising in the case of *sloinneadh*. However, *u*-vocalism is attested in early forms of the verb *sluinnidh*, see DIL s.v. *sluindid* which may conceivably have affected the development in the related noun *sloinneadh*. Raising of //o// to /ũ/ occurs in a nasal environment in *coimhead* in GL and ESG, although such realisations usually alternate with /õ/ (and in some cases /ɲ/), see below. In ESG, raising of //o// appears to be common following the labials /b f/, e.g. *boireannach, *boin* (vb), *foithne*. The origin and development of the verb **boin* is not entirely certain although it appears to derive from *boing* (vb) 'breaks, reaps', see DIL s.v. *boingid*, having been influenced somewhat by *benaid* (DIL s.v.) 'hews, cuts'. MacBain (EDGL s.v. *buin*) suggests that the ScG form 'seems to confuse *bean* and *bun*, stock'. However, the *u*-vocalism in *boing* is attested early in literary sources, see DIL. s.v. *boingid*. This raises the possibility of ScG *buin* /u/ deriving from original //u// rather than //o//. Our discussion so far reveals that ESG *boireannach* /u/, *foithne* /o~u/ may be the only genuine examples of the raising of original //o// to /u/ in the prepalatal position in ScG, both of which significantly contain original //n'//. Even *boireannach* itself could be rejected as an instance of the raising of original //o// to /u/ on the grounds that *boireannach* derives from

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[60]'wart'; Cf. *faithne* Irish.
[61]/o/ E; /u/ B, G.
[62]'navy'; < //u//?
[63]'ship'.
[64]/o/ Eoropie, Lewis, DOH.
[65]The adjective *doilich* which usually occurs with /u/ in ScG (but cf. /o/ GK) may derive from *duilich* by analogy with **suilich*, see DIL s.v. *doilig, suilig*.
[66]I have marked **loingeas* with an asterisk since this form probably derives from the oblique stem *luing* of *long*.

baineannach with original //a//. However, we have argued in chapter 3 that original //a// may have been raised to /o/ following the labial /b/ in this word and some others. The synchronic evidence therefore argues against a universal minor phonological rule in ScG for the raising of //o// to /u/, /ɯ/.

If this is correct, what then are we to make of ScG *tuirseach* 'sad, melancholy' which derives from CG *toirseach*, see DIL s.v. *toirsech*? This lexeme is unfortunately not attested in the majority of monographs on ScG dialects. I have noted it only in EPG where it is realised as /tur·šəx/ and glossed 'sad'. Ó Murchú (EPG: s.v. *tuirseach*) notes that in this word '/r·š/ may represent a spelling pronunciation' although he does not comment on the *u*-vocalism in this word. Dieckhoff (PDSG s.v. *tuirseach*) notes /u:/ in this word which he glosses as 'mournful, sad'. In chapter 6 we note that lengthening of //u// is not attested before the group //rʃ// in ScG other than in *tuirseach*, which, however, contains original //o// rather than //u//; cf. /u/ *ursa*. Another explanation is therefore required for the synchronic reflexes of ScG *tuirseach* /u:/.

We have argued in section A that *ui* spellings for original //o// (e.g. *tuirseach*) in Irish are unlikely to represent /u/ reflexes but rather reflect /i/ reflexes. One possible explanation of the *u*-vocalism in ScG *tuirseach* would be that it reflects a spelling pronunciation based on the Irish literary form *tuirseach*. Similarly, the ScG spelling of *Muire* (< *Maire*) with *u* has been affected by the Irish spelling and in any case does not reflect phonological reality. Alternatively, ScG *tuirseach* could represent a hyper-correction based on the correlation between Irish /CiC'/ and ScG /CuC'/ as witnessed for instance in *tuig* /i/ Irish ~ /u/, /ɯ/ ScG. Another possibility is that the ScG form has been contaminated by another lexeme, perhaps semantically related to *tuirseach*. Dr Iain MacAonghuis suggests tentatively to me that *tùchadh* 'hoarse voice' may in some way have affected the vocalism of *tuirseach*, noting that a person who is *tuirseach*, which he says has connotations of 'being tired' as well as 'sad', is normally quietly or softly spoken. Another source of contamination may have been the verb *tuir* 'relate, chant with a mournful air, mourn, weep', see Dwelly s.v. *tuir, tuireadh*. In support of such contamination or analogy, we note that Dwelly lists *tursadh* among the possible verbal nouns of this verb, which shows that *tuir* (vb) and *toirse/tuirse* may have been associated in some way in ScG. In any case our discussion of ScG *toirseach/tuirseach* concurs with the conclusion reached earlier that there is little convincing evidence for the raising of //o// to /u/, /ɯ/ before palatals in ScG outside of ESG.

//o// > /ɤ/, /ɛ/, /e/~/ɸ/

The developments //o// > /ɤ/, /ɛ/, /e/~/ɸ/ are illustrated in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
broilleach	**aL'**[67]	--	--	ɔL'[68]	--	[oL][69]	--[70]	**ɤl(j)**
coinnich	**ɤ**[71]	--	--	--	--	--	--	**ɤ**
coinneamh	**ɤ**	--	--	**ɤ**	--	--	--	--
doirbh	**ɤ**	**ɤ**	**ɤ**	--	--	--	--	**ɤ**[72]
doirchead	--	--	--	--	--	--	--	**ɤ**
loisg-	**ɯ**	**ɤ**	--	--	--	**o**	**o**	--
sloinneadh	**ɯ**[73]	--	--	**ɤ**	--	**e~ɸ**	--	--
oibrich	**o**[74]	--	--	--	**e**	**e**	--	**ɛi, e**
sgoilt	**ɤ**	--	--	--	--	--	**o**	--
soilleir	**ɤ**	ɔ (Ba)[75]	**ɤ**	**ɤ**	--	**o**	--	**ɤ**
soitheach	**ɛ**	**ɤ, ɛ**[76]	--	**ai**	**e~ɸ**	**e~ɸ**	**e(:)**	**ɤ**
soirbh(eas)	--	ɛ (Ba)	**ɤ**	--	--	--	--	**ɤ**

Table 5B.16

While it is impossible, based on the evidence of table 5B.16 alone, to establish in which dialects the changes //o// > /ɤ/, /ɛ/, /ɸ/~/e/ / __ C' occur most frequently, we can nevertheless make some general comments about the phonological environments in which these changes have taken place. Considering the preceding and following consonantal environments for the change //o// > /ɤ/, we get the following results: (numbers in brackets indicating the number of words in table 5B.16 for each environment in which the change //o// > /ɤ/ takes place):

s (3) >> k, d, L (2) >> br, sg, #__ (1)

__ L', N', r'C'[svar] (3) >> ʃg', b'r', θ' (1) **(J)**

Considering only those environments for which a score of two or above is calculated in (J), it follows that the optimal environments for the unrounding of //o// to /ɤ/ in ScG are:

C __ C' C = s >> k, d, L C' = L', N', r'C'[svar] **(K)**

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[67][öL':], [ö:L':] LASID IV, Lewis, Q. 476, 477.
[68][ɔL] LASID IV, Wester Ross, Q. 476, 477.
[69][ǫL] LASID IV, Arran, Q. 476, 477.
[70][aL'] LASID IV, Sutherland, Q. 476, 477.
[71]/o/ Eoropie, Lewis, DOH.
[72]*soirbh*.
[73]/o/ Eoropie, Lewis, DOH.
[74]*oibreachadh* > *obrachadh*?
[75]/ɤ/ *soilleiricheadh*, GUD.
[76]Ba: /ɤ/ 'ship'; /ɛ/ 'dish'. Ha has /ɛ/ for both.

That this development is common before /r'/ in svarabhakti syllables is worth noting. Borgstrøm notes that

> the tendency to develop *o* and *a* to ɤ before palatal consonants has been far from consistently carried out, and not in the same way in all dialects. . . . The vowel ɤ is usual in words with svarabhakti in the group *rv*. (DOH:200-1)

//o// > /ɛ/

Leaving aside the GK and GA developments for the time being, we see that fronting to /ɛ/ in our sources occurs only in *soitheach* (GL, DOH) and *soirbheas* (DOH) which both containing favourable environments for the unrounding of original //o// to /ɤ/: both contain initial /s/, and in *soirbheas* //o// occurs preceding a svarabhakti /r'/ cluster. This observation suggests that fronting to /ɛ/ may represent a fronting of /ɤ/ following the neutral segment /s/. Both stages are attested in Barra where /ɛ/ and /ɤ/ realisations represent different semantic referents of the historical etymon *soitheach*: /ɛ/ 'vessel, dish', /ɤ/ 'vessel, ship'. Fronting to /ɛ̃/ also occurs in the prepositional pronoun *roimpe* 'before her' in Barra. However, this form may have been affected by the masculine form *roimhe*, see below.

GK, GA /e/~/ɸ/ corresponds to /ɤ/ in most other ScG dialects. The development //o// > /e/, /ɸ/ in GK, GA occurs in similar environments as the development //o// > /ɤ/ although I have noted relatively few instances of //o// before palatals in these monographs.

Unrounding to /ɤ/ or /ɯ/ before nonpalatals is rare although I have noted /ɤ/ in *fosgail* (GL), *fosgladh* (DOH) and /ɯ/ in *losgadh, lomnachd* /[ɯrɯ]/ (GL). This suggests that a following /sg/ or /r/ (in a svarabhakti syllable) is conducive to the unrounding of //o// before nonpalatals in some dialects.

__ F[+voice] [+labial]

//o// / __ v, ṽ

Word internal labial fricatives are generally lost in ScG.[77] Disyllables are retained when an intervocalic labial fricative is lost except in some peripheral dialects e.g. ESG, EPG. The development of //o// before labial fricatives in ScG is illustrated in the following table:

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[77]But note *comhfhurtail* /kɔ̃vəRsdal/ GL.

	GL	DOH	S	R	GK	GA	ESG	EPG
obh	oV	oV	oV	[o-u]~əuV	oV	oV	o:V~əu:V	ɔuV
omh	ðV, ð:C	ɔ̃V, ɔ̃:C	ɔ̃V,ɔ̃:C	ɔ̃V, ɔ̃:C	ɔ,ɔ̃V ɔ:,ɔ̃:C	ɔ̃V,ɔ̃:C	ð:V	ɔ̃əV,ɔ̃:C
oibh	ə̃ĩC[+nas]	əiC	əiC	əiC	ɔjC	--	--	--
oimh	ɛ̃V, ə̃ĩC	ɔiV, ɔiC[78]	ɛ̃V, aiC	ɔ̃V, uiC	ɔV, ɔjC	ɔ̃V,ɔ̃iC	ɔ̃iV, i:C	ɔ̃iV,ɛ·iC

Table 5B.17

I have noted no examples of the development of //ov// preconsonantally. There are two main developments of //ov// sequences: (a) /o/ and (b) *u*-gliding diphthongs. The development of *u*-gliding diphthongs from //ov// is easily explained. The vocalisation of //v// led to the development of a /w/-like glide which was subsequently vocalised to produce *u*-gliding diphthongs.

//ov// > /ow/ > /ou/

The development of /o/, however, is not so transparent. If we view *u*-gliding diphthongal reflexes of //ov// as relict forms which represent the original development, the development of /o/ can be explained as the result of the smoothing of *u*-gliding short diphthongs as follows:

//ovV// > /owV/ > /ou-V/ > /o-V/

Alternatively, it could be argued that original //o// may have had higher, more rounded, allophones when it occurred before nonpalatal labial fricatives[79] in which case the vocalisation of //v// would have resulted in the development [o̜vV] > [o̜-V] = /o-V/. However, the geographical distribution of *u*-gliding diphthongal reflexes of //ov//, occurring in isolated non-contiguous areas (R, ESG, EPG) suggests that such forms represent relict features in ScG. The exceptional development of /ɔ/ in GL *lobhair(e)* /Lɔ-ər'/ 'leprosy', which occurs frequently in the bible, is perhaps to be explained as a spelling pronunciation.

The development of //o// before nasalised //ṽ// has generally been /ɔ̃(:)/ although nasalised /õ(:)/ occurs in GL (cf. /õ:/ ESG). Short vowels occur as reflexes of prevocalic //oṽ// (except in ESG where /õ:/ occurs) and long vowels in the case of preconsonantal //oṽ//. It is significant that *u*-gliding diphthongs are not attested in our

[78]əiC (Ha); ɛ̃V (Ha).

[79]Cf. our discussion above which shows that //o// was raised frequently to /o/ before the labial /b/.

sources as reflexes of original //oṽ// sequences. It would appear then that the vocalisation of //ṽ// in //oṽ// did not give rise to the *u*-gliding diphthongs which occurred in //ov// sequences. The occurrence of /ɔ̃(:)/ rather than /õ(:)/ generally in ScG suggests that the vocalisation of //ṽ// had little or no effect on the preceding vowel //o//, except when //oṽ// occurred preconsonantally in which case //o// was lengthened. This implies the following development for //oṽ// in ScG dialects:

//oṽV// = [ɔ̃ṽV] > [ɔ̃-V]
//oṽC// = [ɔ̃ṽC] > [ɔ̃:C]

The occurrence of /õ(:)/ in GL can be explained by the fact that 'long /ɔ:/ has the peculiarity of never being nasal' (GL: 68). The occurrence of /õ:/ in ESG can be explained by the fact that the normal reflex of original CG //o:// in ESG is /o:/ rather than /ɔ:/ e.g. *òg* /o:g/ (ESG: 108).

Table 5B.17 indicates that reflexes of //ov// and //oṽ// are still distinguished in ScG dialects. The difference in treatment of //o// before //v// and //ṽ// is partially to be explained as a result of the vocalisation of //v// having occurred prior to the vocalisation of //ṽ//. We have seen that the vocalisation of //v// led to the development of *u*-gliding diphthongs which did not apparently occur when //ṽ// was vocalised.

Significant minor developments of //oṽ// include the development of (a) *comharradh* < *comhartha* which has developed /h/ following the vowel /ɔ̃/ in some dialects, e.g. GL, Ba, S, perhaps as a result of metathesis *comhartha* > *comhtharra[dh]*; (b) *domhain* 'deep',[80] the stressed syllable of which has been denasalised in some dialects, e.g. GL, GA. Wagner does not mark nasality in the word *domhain* for the speakers he interviewed in Arran, Mid-Argyll, Lewis or Wester Ross, see LASID IV: 193, Q. 109. Borgstrøm (DOH: 208) and Oftedal (GL: 74) who both note that the loss of nasalisation is unexpected in the case of *domhain* offer no explanation for the development. However, the loss of nasalisation in *domhain* can be explained as the result of the reassignment of nasality by dissimilation to the final nasal syllable.

//o// / __ v', ṽ'

I have noted no words which would illustrate the development of //o// / __ v'V. The development of //o// before preconsonantal //v'// has generally been *i*-gliding

[80]And in some dialects also *domha(i)n* 'world.

diphthongs, usually /əi/ (but see /ɔj/ Kintyre). The general development before intervocalic //v̄'// has been /ɔ̄/ although /ɛ̄/ also occurs. A diphthong /ɔi/ has developed in some dialects. The development of *i*-gliding diphthongs is the norm before preconsonantal //v̄'// e.g. /əi/, /ɔi/, /ai/, /ui/, /ɛ·i/. A long vowel /i:/ has developed in ESG e.g. *doimhnead*. The occurrence of /ẽ/ (GL), /ɛ̄/ (Ba) in *roimhe* is similar to the fronting of //o// to /ɛ/ discussed above. Raising of //o// to /ū/ occurs in *coimhead* in GL and ESG, although such realisations usually alternate with /õ/ (and in some cases even /ĩ/). There are some instances of short vowel reflexes occurring for preconsonantal //ov̄//, all of which significantly contain the morpheme {*co(mh)-*}, e.g. GL *coimhlionta* /ɔL/ (sic), ESG *comhla* /ɔ̄/. The short vowel in such cases may be explained as later formatives based on the morpheme {/kɔ/} rather than original {/kov̄/}.

__ F[+voice] [+dental]\[+velar]

The development of //oð/ɣ// is summarised in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
odh/gh	oV, o:C	oɣ#,oV,o:C	oɣ#, oV	[o-u]~ əuV	oV	oV	oiV,[81] əu:V ~ o:V	ɔuV
oidh/gh	ɤV, əiC	ai~ɤV, əiC	ɤV, əiC	əiC	(e:C, ø:C)	--	--	əi~əəV, ə·i~ ɛ·iC

Table 5B.18

Word final /ɣ/ is retained in some dialects, especially in word final position,[82] e.g. *crodh* /oɣ/ (DOH, S) but not in others, e.g. *crodh* /o/ (R) in which case /o/ rather than /ɔ/ occurs. There are two developments of //oð/ɣ//: (a) /o(:)/ and (b) *u*-gliding diphthongs. Short monophthongs occur in most dialects when //o// preceded prevocalic //ð/ɣ//, e.g. *bodhar, foghain*. Long monophthongs usually occur when //o// preceded preconsonantal //ð/ɣ//, e.g. *foghnaidh*. The development of *u*-gliding diphthongs is easily explained. The vocalisation of /ɣ/ < //ð/ɣ// would have led to the development of a /uɻ/-like glide, which was subsequently vocalised to produce a *u*-gliding diphthong:

//oð/ɣ// > /oɣ/ > /ouɻ/ > /ou/

The dialects which exhibit the development of *u*-gliding diphthongs as reflexes of

[81]The *i* in /oi/ is a glide, ESG: 61.

[82]Cf. *foghmhar* /ɤɣ/ EPG.

//oð/ɣ// are exactly those which exhibit *u*-gliding diphthongs for original //ov//, i.e. in R, ESG, EPG. This does not of course mean that /ɣ/ necessarily became /v/ before the vocalisation of the fricative took place, although there is some evidence for the minor development //ɣ// > /v/ in ScG, e.g. *saoghal* /sɯ:vəL/ (GL), *carghas* /k[ara]vəs/,[83] *diadhaidh* /d'iəvi/ (Watson 1986a: 65). The development of /o(:)/ from //oð/ɣ// sequences is not so easily explained. Monophthongal realisations /o(:)/ may represent a smoothing of an original *u*-gliding diphthong:

//oð/ɣ#// > /oɣ#/ > /oɯ#/ > /ou#/ > /o#/
//oð/ɣV// > /oɣV/ > /oɯ-V/ > /ou-V/ > /o-V/
//oð/ɣC// > /oɣC/ > /oɯC/ > /ouC/ > /o:C/ **(1)**

Alternatively, it is possible that original //o// may have had higher allophones when it preceded /ɣ/, in which case the vocalisation of /ɣ/ would naturally have resulted in the following developments without having had any tangible effects of the preceding vowel, except when //o// preceded preconsonantal /ɣ/, in which case the preceding vowel was lengthened:

//oð/ɣ#/ > [o̯ɣ#] > [o#] = /o/
//oð/ɣV// > [oɣV] > [o-V] = /o/
//oð/ɣC// > [oɣC] > [o:C] = /o:/ **(2)**

The geographical distribution of *u*-gliding diphthongs as reflexes of //oð/ɣ//, occurring in isolated non-contiguous areas (R, ESG, EPG), suggests that such forms represent relict features in ScG. This would suggest that explanation (1) is the correct one. It is of course possible that //oð/ɣ// may have developed differently in different dialects, some dialects according to (1), and others according to (2).

The most significant minor development of //o// before //ɣ// has been its unrounding to /ɤ(:)/ (/e/~/ɸ/ GK) in a small number of words. These words include *toghadh, foghmhar, roghainn, foghlaim, odhbrann*:

[83]Personal observation in South Uist.

//o// > /ɤ(:)/

	GL	DOH	S	R	GK	GA	ESG	EPG
foghlaim	ɤ:	--	--	--	--	--	--	--
foghmhar	ɤv	ɤv, əu[84]	ɤ	ɤ, əu[85]	--	--	ɤ	ɤɣ
toghadh	ɤ	ɤ	ɤ	--	e~ø	--	ɤ	--
roghainn	ɤ	--	--	--	--	--	--	əə, əi
odhbrann	ɤ:	ɤ:	ɤ:	--	--	--	--	--

Table 5B.19

It is significant that these words reflect the development of //að/ɣ// rather than //oð/ɣ// which would suggest that they are to be derived from //a// rather than //o//. This would imply that //o// was lowered to //a// in these words. According to the conclusions reached above, only *foghlaim, foghmhar* contain optimal environments for the change //o// > /a/, i.e. following /f/. However, *toghadh, rogha, odhbrann*, as well as *foghlaim* and *foghmhar*, are attested in literary souces with *a*, see DIL s.v. *toga, rogu, odbrann, foglaimm, fogamar*.

//o// / __ //ð'/ɣ'//

The general development of //o// before prevocalic //ð'/ɣ'// is /ɤ/ although *i*-gliding diphthongs also occur. Before preconsonantal //ð'/ɣ'//, *i*-gliding diphthongs are the normal development in most dialects. However, lengthening to /e:/~/ø:/ has occurred in GK.

__ SON#\+C[+hom]

Lengthening to /ɔ:/ is the norm before //R//, although /o:/ occurs in ESG.[86] Lengthening to /ɔ:/ before rC[+voice] groups is common in ScG e.g. *bòrd*. Before rC[–voice] groups, however, lengthening of //o// appears to be lexically conditioned as a comparison of realisations of *doirt* (vb) and *goirt* illustrate:

	GL[87]	DOH	S	R	GK	GA	ESG	EPG
doirt (vb)	ɔ:	--	--	--	--	--	o:	ɔ:
goirt	ɔ	ɔ	ɔ	ɔ	ɔ	--	--	ɔ

Table 5B.20

[84][ɤv] Ha; [əu] Ba. The occurrence of a *u*-gliding diphthong in Ba may be due to the presence of the labial //v̄//.

[85][ɤ] RP; [əu] Ault.

[86]However, ESG /o:/ generally corresponds to /ɔ:/ in other ScG dialects.

[87]Also /ɔ/ in *gort(a)* 'hunger'.

Although *doirt* (vb) is not widely attested in the monographs, it would appear that lengthening is common in this verb. Cf. [ò:] *doirt* (vb) (PDSG s.v.).

Before //L N M// *u*-gliding diphthongs develop except in peripheral southern dialects (GK, GA, EPG) where lengthening and diphthongisation are uncommon before sonorants.[88] Similarly *i*-gliding diphthongs develop before //L' N' M'// except in some peripheral dialects, e.g. GK, GA. It is interesting to note that diphthongisation takes place before the palatals //L' N' M'// in EPG but not before the nonpalatals //L N M//. It is significant that where neither lengthening nor diphthongisation occurs before //L N M//, /o/ rather than /ɔ/ occurs. This correlates with the conclusion reached above that //o// is commonly raised to /o/ before the tense sonorants //L N M// (amongst other consonants) generally in ScG when the sonorants occur intervocalically. This suggests that //o// may have had higher, more tense, allophones [o̝] before the tense sonorants //L N M//. In GK, GA where neither lengthening nor diphthongisation occurs before //L' N' M'//, the normal development is /e/~/ɸ//. In GL //o// is diphthongised to /əi/ before //L' M'// but to /ai/ before //N'//.

[88]Although diphthongisation occurs before //N'// in *broinn* EPG. Lengthening to /o:/ may also occur before //M// in GK.

Section C
A Comparison of the Development of //o// in Irish and ScG

Original //o// has been retained in Irish and ScG dialects to different degrees depending on phonological environment. Retention of *o*-like vowels occurs in all Gaelic dialects before nonpalatals. Before palatals, retention is more common in ScG and Donegal dialects. Similarities of development in both languages are obscured by differing phonemic inventories. One of the striking differences between Ir and ScG has been the phonemic split in ScG of //o// to /o/ and /ɔ/. Donegal dialects show a similar split although the environments in which the split occurred differs from that of ScG, see chapter 8 where phonemic splits are discussed. The divergent developments of //o// in environments other than before fricatives and sonorants in Irish and ScG may be summarised as follows:

		Developments of //o// in Irish and ScG	
		Irish	ScG
(1)	Lowering	/a/	/a/
(2)	Raising	/i/ >> /u/	/o/ >> /u/
(3)	Unrounding	/i/ >> /e/ (Mun, Don) /e/ >> /i/	/ɤ/ >> /e/

Table 5C.1

(1) Lowering

Our discussion of the Irish and ScG evidence led to the conclusion that the most favourable environments for the lowering of //o// to /a/ in each was as follows:

ScG:	C_x __ C_y	C_x = f >> k	C_y = l >> r >> s, g
Ir:	C_x __ C_y	C_x = f >> # >> k	C_y = r >> l, s >> L

A comparison of environments in Irish and ScG shows that the lowering and unrounding of //o// to /a/ occurred most frequently in the environments:

C_x __ C_y $\quad$ C_x = f, k $\quad$ C_y = l, r, s

A preliminary study of words exhibiting *o* ~ *a* variation in literary sources from the Old Irish period onwards (based on DIL) concurs with the above conclusion; it shows that the variation is most common following the segments /f k/. The similarity of environments for this change in Irish and ScG is striking and suggests that the change //o// > /a/ may be an old one, perhaps dating back to the so-called period of Common Gaelic. That this change was established, or at least well under way, by the end of the

twelfth century appears to be supported by the common variation between *o* and *a* evidenced in Classical Irish poetry of the period 1200-1650. The geographical distribution of the change //o// > /a/ establishes an important isogloss which separates Munster from other Irish dialects and also from those of ScG: leaving aside the word *foda* which occurs as *fada* in all Gaelic dialects, the lowering of //o// > /a/ is all but unknown in Munster dialects. This suggests clearly that the development had a northern locus. This provides us with yet another early phonological development separating northern from southern Gaelic dialects.[1] Leaving aside the common core environments listed above in which the change occurs both in Irish and ScG, the development has otherwise occurred in different phonological environments and in different sets of words. This would suggest that the change //o// > /a/ had established itself in CG in the environments C_x __ C_y , C_x = f, k, C_y = l, r, s
but that its subsequent development in Irish and ScG was divergent.

The change //o/ > /a/ can be explained as a natural phonetic development in the environments f, k __ l, r, s. We might expect original //a// to have had back allophones following the labial /f/ and the velar /k/ in the region of [ɑ] with possible tendencies to rounding in the region of [ɒ]. Similarly, original //o// in these environments would have had allophones in the range [ɔ] – [ɒ]. The close phonetic proximity of the allophones of //a// and //o// in these environments could very easily have given rise to a partial merger of //a// and //o// in favour of either. We claim that the result of the partial merger of //o// and //a// following //f k// depended on the nature of the following consonantal environment. There is evidence of partial mergers in favour of both //o// and of //a//. In our discussion of the development of original //a// (chapter 3), we noted that //a// was raised to /o/ in some cases as early as the Old Irish period following labials. We also noted that //a// was raised to (*)/o/[2] following the velars /k g/, and when preceding palatals. A comparison of the developments //a// > (*)/o/ preceding palatals and //o// > /a/ preceding nonpalatals suggests that the result of the partial merger of //a// and //o// depended to a large extent on the nature of the following consonantal environment. When //a//, //o// occurred before palatals, merger resulted in (*)/o/; when //a//, //o// occurred before nonpalatals, merger resulted in /a/. This suggests the following rule for CG:

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[1]For others, see Ó Buachalla (1977), Ó Maolalaigh (1995/96), Ó Sé (1996).
[2]Recall we use the symbol */o/ to signify the different phonemic or subphonemic outcome of the raising of original //a// in the prepalatal environment.

(1) //a// ↔ //o// / f, k, g __
(2) //a// ↔ //o// → (*)/o/ / __ C'
(3) //a// ↔ //o// → /a/ / __ C

The preference for higher phones in the prepalatal environment, and thus merger[3] of //o//, //a// in favour of (*)/o/, is natural in phonetic terms since we would expect higher phones in this environment.

Lowering of //o// to /a/ in the prepalatal environment also occurs, although the change is far more common in Irish than in ScG dialects.[4] This may suggest that lowering to /a/ before palatals may be a later development in Ireland. However, the fact that the developments //a// > (*)/o/ and //o// > /a/ before palatals occurred in complementary environments suggests that both developments may be connected:

//a// > (*)/o/	C __ C', C = #, k, g	C' = l', r'
//o// > /a/	C __ C', C = k, kr, kL, sL	C' = ʃ, d', rt', k', g', N', ṽ', L'[5]

A detailed phonetic study of these consonantal environments, which is outwith the scope of the present thesis, may shed some light for the divergent developments in these cases. We may conclude that the lowering of //o// to /a/ may be connected to the development //a// > (*)/o/. In particular, we have shown that both developments can be described in terms of a rule which states that each development has taken place in complementary environments, a fact which has hitherto not been noticed.

We noted that the lowering of //o// to /a/ has occurred frequently before the segments //l r s//. If //a// had non-back allophones before these segments, it is possible that the lowering of //o// preceding these segments may have been motivated by a tendency for //o// to maximise on the 'unused' phonological space in the low back area defined by the mini-phonological vowel space __ r l s. Although non-back allophones of //a// may have occurred before the neutral segment //s//, it is not clear what the distinctive features of CG //l r// may have been. If these segments were not strongly velarised, it is possible that allophones of //a// occurring before these segments may have been less back than the allophones of //a// which occurred before //L N//. A less back

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[3]Including the possibility of near-merger, discussed in chapter 3.
[4]In ScG it is commonly attested only in *croiceann,cloigeann*.
[5]In ScG before /L'/ only in *broilleach*. We have suggested that lowering of //o// to /a/ preceding palatal nasals in Connacht, e.g. *goimh, sloinneadh* may have been due to an entirely different process than that discussd here.

articulation for allophones of //a// before the segments //l r// and //s// may have been a contributory factor to the lowering of CG //o// before these segments.

(2) Raising

Raising to /u/ in Irish, and to /o/, /u/ in ScG has occurred before nonpalatals in the following optimal environments:

Irish

//o// > /u/ / C_x __ C_y C_x = m > N, b, f, Cr, L, #; C_y = x, k, L(C), m > ɣ, l, n, g

ScG

//o// > /o/ / C_x __ C_y C_x = k, m > b, f, L, t; C_y = g > θ, m, N, L, s, x

//o// > /u/ / C_x __ C_y C_x = m; C_y = N

Raising to /u/ in both Irish and ScG occurs commonly following the labial nasal /m/. It occurs commonly before /N/ in ScG but apparently not in Irish. Otherwise the raising of //o// to /u/ in Irish and to /o/ in ScG have occurred in similar preceding consonantal environments, but in slightly different following consonantal environments although this raising occurs in both languages before the segments //m L x//. The vacinity of nasals, labials and velars have led to raising of //o// in both varieties.

We have argued in the case of both Irish and ScG that there is little substantial evidence to support the raising of //o// to /u/ in the prepalatal environment. We have thus concluded, in agreement with McManus (1994: 347), that Early Modern Irish orthographic spellings *ui* for original //o// are, in most cases, likely to indicate that //o// had been fronted to /i/ rather than indicating that //o// had been raised to /u/. We pointed out, however, that //o// may have been replaced in some instances by //u// in the prepalatal environment as a result of analogy. We mentioned in this respect *Muire* (Irish, ScG) and *tuirseach* (ScG). Our discussion of the possible raising of //o// to /u/ in the prepalatal position in Gaelic provided a possible illustrative example of the ways in which the ScG vernacular may have been influenced by Irish literary forms. In particular, we suggested that the *u*-vocalism of *tuirseach* may originally have been a spelling pronunciation based on the later Irish form *tuirse(each)*. Raising to /i/ is dealt with below in our discussion of the fronting of //o//.[6]

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[6]For a discussion of the vocaism of *oiread/uiread*, see appendix 7, where it is suggested that the ScG orthographic form *uiread* may be an Irish literary form.

(3) Unrounding

Unrounding to /e/, /i/ in Irish and to /ɤ/, /e/, /ɛ/ in ScG has occurred in the prepalatal position. Raising to /i/ has occurred in all Irish dialects before nasals. However, raising to /i/ is otherwise only commonly attested in Donegal and Munster dialects, Connacht dialects having on the whole retained a mid vowel /e/ (or /o/). We concluded that fronting and unrounding to /i/, /e/ occurred most commonly in the following environments in Irish dialects:

C __ C' C = k >> f >> d, L, g C' = r' >> ʃ, ṽ', l' >> n', N'

We concluded in the case of ScG that unrounding to /ɤ/ (/e/ in the case of GK, GA,) occurred most commonly in the environments:

C __ C' C = s >> k, d, L C' = L', N', r'C'[svar]

From this we see that the tendency to unround original //o// has occurred most frequently throughout Gaelic dialects when //o// was preceded by the segments /k d L/ and followed by /r' N'/. We noted that this unrounding was particularly common in ScG dialects in svarabhakti syllables when //o// preceded /r'/. We may note here that unrounding and fronting also occurs in this environment in Irish, e.g. *foirm, foirfe*.

__ F

There has been a tendency to drop word internal fricatives in both Ir and ScG. The most significant difference between Ir and ScG is that the loss of intervocalic fricatives usually results in the coalescence of the preceding and following vowels in Irish except in some Connacht dialects where disyllables are retained; the original syllabic structure is generally retained in ScG dialects.

(ii) __ F[+voice] [+labial]

Original //v// has been vocalised following //o// in all Gaelic dialects. The universal vocalisation of //v// following //o// but not other vowels (e.g. //a//) suggests that the vocalisation of //v// may have occurred in stages, perhaps even beginning in the environment of a preceding //o(:)//. For further discussion of this point, see chapter 8. The development of //o// before preconsonantal //v// is not well attested in our sources. The development of //o// before the nonpalatal labial fricatives is summed up in table 5C.2 below. There have been two main developments of //ovV// sequences in Gaelic dialects as a whole: (a) monophthongs /o/ (ScG), /o:/ (Don), (b) *u*-gliding

diphthongs (Con, Mun; R, ESG, EPG). Each of these developments may represent independent direct developments of original //ov// sequences. However, given the wide geographical distribution of *u*-gliding diphthongs and the fact that we might expect *u*-gliding diphthongs, it seems reasonable to assume that the monophthongs /o/, /o:/ may represent a smoothing of original *u*-gliding diphthongs. The two possibilities may be described as follows:

(1) //ovV// > /owV/ > /ouV/
//ovV// > /owV/ > /o(:)V/

(2) //ovV// > /owV/ > /ouV/
//ovV// > /owV/ > /ouV/ > /o(:)/

The development of //ov// and //oṽ// sequences in Irish and ScG dialects is illustrated in table 5C.2.

	Irish (Con, Mun)	**Don**	**R, EPG, ESG**	**ScG (other)**
obhV	ou	o:	əu	o
obhC	--	--	--	--
omhV	ð: ~ ũ:	ð:	õə, ð:	ɔ
omhC	ð: ~ ũ:	ð:	õ	ɔ:

Table 5C.2

It follows from table 5C.2 that the opposition between //ov// and //oṽ// has been retained in most, if not all, Gaelic dialects. Reflexes of //ov// and //oṽ// are distinguished in two ways: (a) reflexes of //oṽ// may be nasalised (especially in ScG), (b) *u*-gliding diphthongs do not occur as reflexes of //oṽ// in either Irish or ScG. The divergent developments of //ov// and //oṽ// sequences can no doubt be attributed to the fact that //v// was vocalised prior to //ṽ// in both Ireland and Scotland. The fact that *u*-gliding diphthongs do not develop from //oṽ// sequences may be significant. In particular, it implies that nasalised //õ// when followed by a (nasalised) labial fricative resisted the development of *u*-gliding diphthongs. This may imply that nasalised //õ// may have been more prominent than //o// in the position before labial fricatives, thus resisting a shift in vocalic nucleus. Although Donegal and ScG dialects distinguish between two rounded mid back phonemes /ɔ(:)/ ~ /o(:)/, it is interesting to note the divergent developments of //oṽ// in each: /õ(:)/ is the norm in ScG whereas /õ:/ is the norm in Donegal.

There is evidence in both Irish and ScG dialects to suggest that intervocalic //ṽ// was denasalised in words in which the coda of the following unstressed syllable was a nasal segment. The loss of nasalisation in such instances can be explained as the result

of the reassignment of nasality, by dissimilation, to the final nasal syllable. This development is witnessed in *domhan* 'world' in most Irish dialects and in ScG to a lesser extent in the words *domhain* 'deep', *domha(i)n* 'world'.[7] In the word *comhartha*, /h/ has developed following //o// in Irish (Con and Don) and ScG (GL, Ba, S) dialects. This development may be a result of metathesis: *comhartha* > *comhthar(r)a[dh]*.

The development of //o// before //v'// and //ṽ'// has been similar in both Ir and ScG although instances of //ov'// and //oṽ'// are rare in the monographs. What evidence we have shows that both //v'// and //ṽ'// have been vocalised in all ScG dialects following //o//. The situation is different in Irish dialects: following //o//, //v'// has been vocalised preconsonantally in Munster dialects. Otherwise both //v'// and //ṽ'// have been retained as /v'/ in other Irish dialects. Fronting to /e/, /i/ occurs in some Irish dialects, to /e/, /ɛ/ in some ScG dialects before //ṽ'//. The development of *i*-gliding diphthongs has occurred in both Irish and ScG before preconsonantal //v'// and //ṽ'//.

(iii) __ F[+voice] [+dental]\[+velar]

The fricatives //ð/ɣ// have been vocalised following //o// in all Irish dialects but /ɣ/ has been retained in some ScG dialects, especially in word final position, e.g. *modh, crodh* (DOH, S).[8] There have been two main developments of //oð/ɣ// sequences in Gaelic dialects: (a) monophthongs /o/ (ScG), /o:/, /ɔ:/ (Irish) and (b) *u*-gliding diphthongs in both Irish and ScG dialects. These developments are illustrated in the following table:

	oð/ɣV	oð/ɣC[−nas]	oð/ɣC[+nas]
Mun	əu	əu	əu
Con	əu	o:	o:, u:
Don	o:	ɔ:	o:
ScG (A)[9]	o	--	o:
ScG (B)	ou	--	--

Table 5C.3

Our ScG sources unfortunately do not furnish us with instances of //oð/ɣC// in dialects of type ScG (B) which explains the lacunae in the above table. The development of *u*-gliding diphthongs is easily explained as the natural development of the vocalisation of the velar fricative /ɣ/ < //ð/ɣ//. It is not clear, however, whether or

[7]The development of *domhain* 'deep' may have been affected by *dobhar* 'water'.
[8]Cf. /ɤɣ/ in *foghmhar* (EPG).
[9]ScG (A) includes GL, DOH, S, GK, GA. ScG (B) includes R, ESG, EPG. In ESG both /əu:/ and /o:/ are attested and so ESG properly belongs to both ScG (A) and ScG (B) type dialects.

not the monophthongs /o(:)/ (Irish, ScG), /ɔ:/, /u:/ (Irish) represent discrete developments of //oð/ɣ// or secondary developments of *u*-gliding diphthongs. Either explanation is possible. This and similar questions may perhaps be resolved when the materials of the *Survey of Gaelic Dialects* become available.

There is some evidence to suggest that //o// was lowered to /a/ before the velar fricative //ɣ// prior to its vocalisation. This is suggested by the parallel development of //o// in a small set of words — with some shared membership between Irish and ScG — and //a// before //ɣ//. This is illustrated in the following table:

	//o// > /a/ / __ ɣ		
	Mun. Con	Don	ScG
togha(dh)	əu	ɤ:, e:	ɤ
rogha(inn)	əu	ɤ:, e:	ɤ
foghmhar	o:, u:	ð:	ɤ
foghlaim	əu (Mun) o: (Con)	ɔ:, o:	ɤ:
odhbrann	--	--	ɤ:

Table 5C.4

The divergent developments of //o// illustrated in table 5C.4, which reflects the development of //aɣ// rather than //oɣ//, suggests that //o// was lowered to /a/ prior to the vocalisation of /ɣ/ in these words. In all cases orthographic forms with *a* are attested in the written record during the Early Modern period. This development has occurred more frequently in ScG than in Irish although the change is attested in ScG and in Donegal dialects in the case of *rogha, togha*. It is unlikely that //o// was lowered to /a/ in these words in Connacht and Munster dialects since if it had, we would expect *i*-gliding diphthongs as the modern reflexes in these dialects, see chapter 3. The divergent development of //o// in *rogha, togha* provides us with another possibly early isogloss which separates Munster and Connacht dialects from Ulster and ScG dialects.[10]

Before //ð'/ɣ'// *i*-gliding diphthongs have developed in all Gaelic dialects except Donegal and south west Argyllshire dialects where monophthongs have developed: /e:/ (perhaps from earlier /ɤ:/) in Donegal, /e:/~/ɸ:/ in GK, GA. Unrounding to /ɤ/ is common also in ScG before prevocalic //ð'/ɣ'//.

[10]This may be added to C. Ó Baoill's (1978: *passim*) list.

(iv) __ SON#\+C[+hom]

Original //o// is usually lengthened in all Gaelic dialects before //R// except in some Connacht dialects where diphthongisation occurs (ICF). Lengthening results in /o:/ in most Irish dialects but in /ɔ:/ in ScG and Donegal dialects. The development of //o// before //rC, rC'// groups is more complex. We must distinguish between the environments //rC(')[+/–voice]//. The development of //o// before these groups is summarised in the following table:

	//o// / __ rC(')[+/-voice]				
	Mun	**S. Con**	**N. Con**	**Don**	**ScG**
_rC(')[+voice]	o:	au	o	ɔ:	ɔ:
-rC(')[-voice]	o	o	o:, o	ɔ:, ɔ	ɔ:, ɔ

Table 5C.5

If we plot the results presented in table 5C.5 in a simplified form in a scalogram based on the variable rC(')[αvoice], some interesting patterns emerge (+ indicates that lengthening has occurred, – that lengthening has not occurred):

	//o// > /VV/	
	_rC(')[+voice]	_rC(')[–voice]
Mun	+	–
S. Con	+	–
N. Con	–	+
Don	+	+
ScG	+	+

Table 5C.6

There is an implicational relationship between the environments rC(')[+voice] and rC(')[–voice] involving north Connacht and, Donegal and ScG dialects, namely, that if lengthening occurs in these dialects before _rC(')[+voice] then it also occurs before _rC(')[–voice]. There is no implicational relationship between these environments in Munster or south Connacht dialects. This would seem to suggest that the development in Munster and south Connacht is unrelated (in the implicational and perhaps therefore historical sense) to the development in ScG, Donegal and north Connacht.

The ScG and Irish evidence suggests that lengthening of //o// before rC[–voice] groups is lexically conditioned as a comparison of reflexes of *doirt* (vb) and *goirt* in Irish and ScG illustrates:

	//o// / __ rC[-voice]			
	Mun	**Con**	**Don**	**ScG**
do(i)rt- (vb)	o	o:	ɔ:	ɔ:
go(i)rt	o	o	ɔ	ɔ

Table 5C.7

Donegal, Connacht and southern peripheral ScG dialects do not generally lengthen or diphthongise //o// before sonorants. It is worth noting that for Donegal and ScG where there is a phonemic opposition between /o/ and /ɔ/ that it is the higher vowel /o/ rather than /ɔ/ which occurs before the originally tense sonorants. Munster and south Connacht dialects pattern with central ScG dialects in that diphthongisation of //o// occurs before the sonorants //L N M L' N' M'//, *u*-gliding before //L N M// and *i*-gliding before //L' N' M'//.

Chapter 6

Section A
Development of //u// in Irish

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //u// has on the whole been retained[1] preceding non-palatals (other than fricatives and sonorants) in Irish dialects and has been generally fronted and unrounded to /i/ before palatals.

//u// > /i/

The change //u// > /i/ is usually explained as a case of progressive assimilation whereby a new nucleus has developed from a former [^{i}] on-glide (McCone 1994: 86; McManus 1994: 346):

$$//u// = [u^{i}] > [^{u}i] = /i/$$

However, this formulation may be an oversimplification of the development since it is likely that in many dialects the fronting of //u// to /i/ took place gradually in a trajectory which passed through various phonetic stages in the range [u] – [ɯ]/[y] – [I] – [i]. We may compare Lass' *preferred adjacency principle* for well-formed vowel changes which states:

> A well-formed vowel change is ceteris paribus no larger than a move from one cell to an adjacent one (vertically, horizontally, diagonally). (Lass 1978: 271)

Despite the general fronting to /i/ of original //u// in Irish dialects, /u/ has been retained, in some cases alternating with /i/, in a number of words where original //u// is preceded by a labial or a velar. A representative list of such words is presented in the following table:

[1]But see below on Donegal dialects.

//u// > /u/, /u/~/i/ / __ C'

	IWM	IR	ICF	IT	IE	DD	TY
a-muigh	**u#**	**u#**	**u#**	ix'	**ux'**~ix'	ix'	i:
muid	--	--	**u~i**	i	i	--	i
*Muire	i	i	**u~i**	i	i	--	i, o
muise	--	--	--	i	**u**	--	--
cuid	**u~i**[2]	i	**u~i**[3]	i	i	i	i
cuisle	i[4]	--	**u**	i	**u**	**u**	i, o
cuiscreach	--	--	--	--	--	**u**	o
cuisneach	--	--	--	--	--	**u**	--
pruisleach	--	--	**u**	--	--	--	--
puisín	--	--	--	--	**u**	i	i
bhfuil	i	i	i	i	**u~i**	i	i
cluiche	--	--	--	i	**u~i**	i	i

Table 6A.1

An analysis of the preceding and following consonantal environments for the occurrence of /u/ in the prepalatal position, based on the above table, provides the following results (where the numbers in brackets as usual refer to the number of words in which /u/ is the attested reflex of //u// for each relevant environment in table 6A.1):

C __ m (4) >> k (4) >> pr, p, v, kL__ (1)
__ C' __ ʃ (6) >> d' (2) >> ɣ', r', l', x' (1)

From this it may be concluded that /u/ occurs for original //u// in the prepalatal position most frequently in the environments (if we consider only the environments for which //u// is retained in two or more words in table 6A.1):

C __ C' C = m >> k C' = ʃ, d'

It is uncertain whether or not /u/ in such instances reflects the original back quality of the vowel //u// or if it represents a secondary retraction of a fronted /i/ < //u// following the labial /m/ and the velar /k/. Sommerfelt (DT: 21-2) argues that /u/ in *cuid, cuirp, cuireadh* etc. originated as an off-glide following /k/ before /i/, thus supporting the latter interpretation. De Bhaldraithe appears to agree with Sommerfelt when he says of ICF that

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[2]See IWM: 103, n. 3.
[3]'/i/ is sometimes replaced by /u/ when it occurs preceded by a velar, other than /d t r s/ and followed by a palatal, particularly in a monosyllable or in a word of two syllables where the second one contains a neutral vowel.' (ICF: §31, p. 10).
[4]*cuisleóir* /i/ (PRT).

> /i/ is sometimes replaced by /u/, when it occurs preceded by a velar, other than /d t r s/ and followed by a palatal, particularly in a monosyllable or in a word of two syllables where the second one contains a neutral vowel. (ICF: §31)

He cites the examples: *cuit, cuid, muid, Muire, goin*. Given alternation between /u/ and /i/ (in Donegal dialects particularly) and /u/ realisations for prepalatal //a// and //o// which we have argued in an earlier chapter were not raised to /u/ e.g. in *gairm, goin* etc., it would appear that Sommerfelt's interpretation is correct. Note /u/ in the following words which probably represent a secondary development of /i/:

//a//, //o// > /u/ / g, k __ C'		
ICF	/u/	goin
IWM	/u/	againn, agaibh[5]
DD	/u/	gaibhte, goidtear
DT	/u/	gairm, goin, coinín

Table 6A.2

However, it must nevertheless remain a possibility that the occurrence of /u/ for original //u// may represent, in some cases at least, genuine instances of the retention of //u// rather than a secondary rounding and retraction of /i/ < //u//. One such instance may be ICF *suidh* /su/ where we would not expect /i/ to be retracted and rounded to /u/ following the relatively neutral segment /s/.

The fronting of //u// to /i/ has in some instances resulted in the palatalisation of the preceding consonant or consonant cluster.[6] This occurs in all Irish dialects in the verb *tuit* > *tit*. The following table provides further instances of this development.[7]

CuC' > C'iC'

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
druid	**d'r'i**	**d'r'i**	dri	--	--	dri	dri
fuinneog	**f'i** (PRT)	**f'i** (PRT)	fi	fi	fi	fi	fi
muineál	**m'i** (PRT)	--	--	mi	mi	mi	mi
tuit	**t'i**	**t'i**	**t'i**	**t'i**	**t'i**	**t'i**	**t'i, ti**
tuilleadh	ti	--	**t'i**	**t'i**	**t'i**	**t'i**	**t'i**
tuilleamh	--	tə (PRT)[8]	**t'i**	--	--	t'i	--
tuile	ti	--	ti	ti	ti	--	ti
tuig	ti	ti	**t'i**	**t'i**	**t'i**	ti	ti
duilleabhar	di	--	--	**d'i**	**d'i**	di	di
duilleog	--	--	--	--	**d'i**	di	di
duileasc	--	--	--	--	**d'i**	--	--

Table 6A.3

[5]These two forms are stressed on the second syllable in IWM.
[6]Note also the similar development *truscán* > *triusgán* in IWM, IR.
[7]See IWM: §407, IR: §553, ICF: §613, IT: §450, IE: §459, DD: §390.
[8]*tuilleachtain*.

An analysis of the preceding and following consonantal environments for this development provides the following results:

C __	t (5) >> d (3) >> dr, f, m (1) __
__ C'	__ L' (4) >> l' (2) >> d', N', t', n', g' (1)

This implies that the optimal environments for the development CuC' > CiC' is:

C __ C' C = t >> d C' = L' >> l'

The development CuC' > C'iC' is further analysed in the following table and chart:

	IWM	IR	ICF	IT	IE	DD	TY
Total	8	5	7	7	9	9	9
No. C'i	4	3	4	4	6	3	2
%	50	60	57	57	67	33	22

Table 6A.4

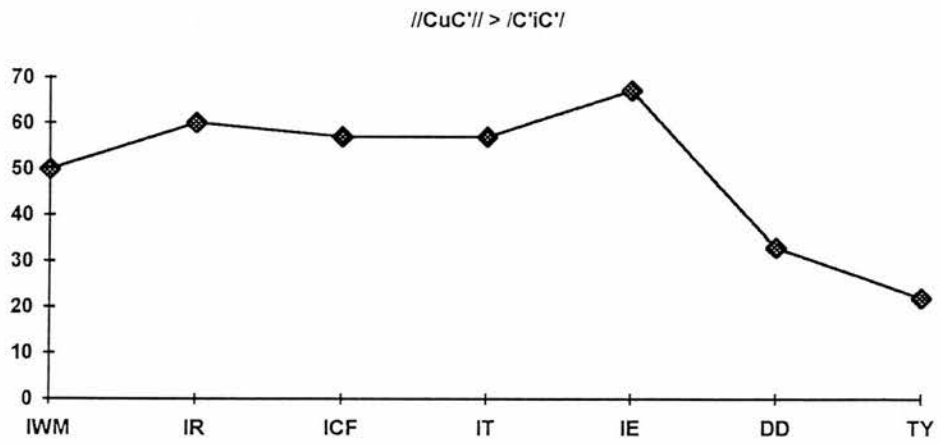

Chart 6A.1

Clearly, the general development CuC' > C'iC' has occurred to a similar degree in Munster and Connacht dialects although it appears to occur more commonly in IE than in any other dialect; the change has occurred least commonly in Donegal dialects. A consideration of the micro-environments in which this development has taken place reveals that the environments for the developent are substantially different in Munster dialects as opposed to Connacht and Donegal dialects:

	CuC > C'iC'			
	dr-	fi-, mi-	ti-	di-
Mun	+	+	(+)[9]	
Con	–	–	+	+
Don	–	–	+	–

Table 6A.5

Table 6A.5 illustrates clearly that the development occurs in Munster dialects mostly in the case of //dr/, //f// whereas it occurs with //t// in Donegal and with //t d// in Connacht.[10] It also follows from table 6A.5 that there is an imlicational relationship between the development //tu// > /t'i/ and //du// > /d'i/, which may be expressed as //du// > /d'i/ ⇒ //ti// > /t'i/, i.e. if it occurs in //du// sequences, then it will also occur in //tu// sequences.[11] This, and the evidence presented above, suggests that the development originated following //t//,[12] and may have originated in Connacht dialects.

The developments //t, d, fuC'// > /t, d, f iC'/ > /t', d', f'iC'/ may be seen as a regressive development of palatalisation whereby both the vowel (//u//) and the preceding consonant have been 'fronted'. In this respect, it is worth noting that in Connacht the segments /t d/ are non-velarised, and therefore perhaps more prone to be palatalised than velarised segments. Nevertheless, it is significant that this change has occurred in all Irish dialects in the verb *tuit*. There are a number of possible explanations for the shift //t// > /t'/ in this case: (a) the initial /t'/ could be explained as a case of regressive assimilation between the initial and final consonants (and indeed between the vowel /i/ and following /t'/) in the verbal stem; (b) initial /t'/ may represent a back formation based on the morphophonemic patterns /t/, /t'/ → /h/. Based on these patterns, lenited forms, e.g. *thuit* (PAST) could have been reinterpreted as containing underlying /t'it'/ rather than /tit'/. I believe that explanation (b) is the more likely explanation as it has greater explanatory power. In particular, it explains the large number of instances of //t// > /t'/ in Connacht dialects, e.g. *tuilleadh, tuill(eamh), tuig*.[13] The verbal forms *tuill(eamh), tuig* would regularly occur lenited in the past tense etc. The adverb

[9]Only in *tuit* (vb), apparently not in *tuilleamh, tuig,* but /t'i/ occurs in *tuilleadh* in some south Munster dialects, see map 15.

[10]See map 15 (*tuilleadh*).

[11]Although this implicational relationship appears to hold for Connacht dialects, the change in question is clearly lexically conditioned and does not occur universally. Cf. *tuilleadh* /t'i/ ~ *tuile* /ti/.

[12]This is supported by the fact that the change occurs following //t// even in Munster dialects in *tuit* (vb).

[13]The analogical base can be further exemplified by the following pairs: *tuill* /ti(:)L'/ ~ *thuill* /hi(:)L'/ and *till* /t'i(:)L'/ ~ *thill* /hi(:)L'/.

tuilleadh frequently occurs lenited in the phrase *a thuilleadh*, see map 15, based on LASID I: 39. If this explanation is correct, it implies that this development can only have occurred once the development //θ// > /h/ had taken place, which places it some time after the thirteenth century; see O'Rahilly (1930) for the dating of the change //θ// > /h/.

That //t// > /t'/ represents a back formation rather than a phonetic process of assimilation may be supported by the fact that the change //t// > /t'/ occurs in *tuit* (vb), *tuig* (vb), *t(h)uilleadh*, *tuill(eamh)* (vb) but not in *tuile* 'flood'. The retention of //t// in *tuile* may be due to its probable less frequent occurrence in lenition environments,[14] unlike *thuit* (PAST), *thuig* (PAST), *a thuilleadh*, *a thuilleamh* (INFINITIVE), *thuill* (PAST) which all regularly occur in lenition environments. A similar process may also explain the change //f// > /f'/ in Munster dialects where lenited /fi-/ (< //fu-//) is identical to lenited //f'i-//. We may compare the general Irish development //s// > /ʃ/ in *saoil* > *síl* (vb). The development //dr// > /d'r'/ in Munster can be attributed to a tendency to palatalise Cr groups preceding /i/, cf. *trusgán* (IWM)

Once the change //t// > /t'/ and the alternation between /ti/ and /t'i/ was established, it could conceivably have spread to other environments most notably //di//, perhaps initially from instances of eclipsed /t(')/ > /d(')/.[15] We conclude our discussion of the development //CuC'// > /C'iC'/ by noting that it is unclear whether the palatalisation of initial //C// in such instances is due to regressive assimilation or back formation.

//u// > /o/, /e/ / __ C

One of the most significant minor developments, common to all Irish dialects, is the lowering of //u// to /o/ before certain nonpalatals which may in some dialects alternate with /u/ or /e/. The following table illustrates the development:

[14]This is not to say that *tuile* does not occur in lenition environments. Cf. the phrase *tá sé ina thuile*.
[15]Note, however, that the change //ti// > /t'i/ and //di// > /d'i/ are both common before /L'/.

	IWM	IR	ICF[16]	IT	IE	DD	TY
__l							
Uladh	o	--	--[17]	--	--	o	o
fulang	u~o	o	o[18]	el'	el'	il'	ol,il
culaidh	--[19]	--	o	o	o	--	o
tulach	--	--	o	u[20]	--	--	--
__r							
a-nuraidh	ir'	--	o	o	o	ir	or
furmhór	o	--	o	--	--	--	--
curach	--	--	o	--	u[21]	--	ɔ, o
turas	trus	trus	o	o	--	o	o
tur	--	--	o	o	--	o	o, i
turadh	--	--	--	--	o~e	o	o
Murchadh	--	--	mroxə	--	--	--	--
urchar	u	--	o	o	o	o	e
urchóid	--	--	o	o	--	o	e[22]
urnaighe	--	--	--	o	o	o	o
ursa	u	--	o	o	--	o	o
purgóid	ə (PRT)	--	o[23]	o	--	o	o
urradhas	u (PRT)[24]	--	--	--	o[25]	--	--
__x							
luch	u	--	o	o	--	o	o
lucht	o	u~o	o	--	o	o	o
ucht	u	u	o	o	o	o	o
__θ							
cruth	--	ot	u	uf	uf	u	u
guth	u	ux~ox	u	uf	uf	u	u

Table 6A.6

Some of the examples cited in the above table show variation between *au-, ai-, e-, i-, u-* in the older language, e.g. *tulach, turas, urchar, urchóid, urnaighe, ursa, urradhas*. I take such instances to represent underlying //u// although there is clearly a case for arguing that //au// became /o/ rather than /u/ in some Irish dialects, particularly in Connacht. See appendix 7 for discussion of Old Irish /au/.

The occurrence of /o/ for //u// in the above table may be analysed as follows:

---

[16]De Bhaldraithe includes *toidheacht* /t'iəxt/ as an example of /C/ > /C'/. However, initial /t'/ in *toidheacht* could well be due to analogy with *teacht* /t'/.
[17]But note *Cúige Uladh* /ku:g'əLə/.
[18]*fulangaidhe*.
[19]But note *culaidh éadaigh* /klih/.
[20]*tulán*.
[21]*curachán*.
[22]But /a/ *urchóideach*.
[23]*Progadóir*.
[24]'guarantee'.
[25]'strength'.

	IWM	IR	ICF[26]	IT	IE	DD	TY
Total	13	6	18	15	12	16	18
No /o/	4	4	16	11	8	12	14
%	30	67	89	73	67	75	78

Table 6A.7

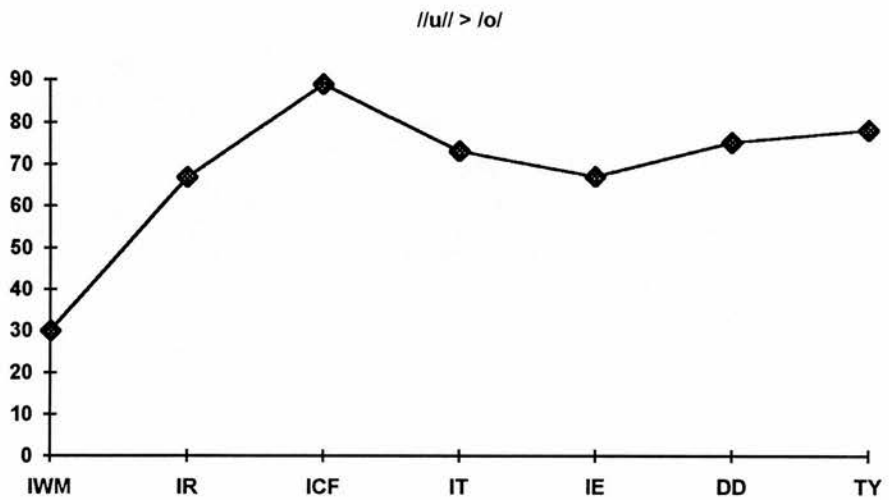

Chart 6A.2

Lowering to /o/ has occurred to a similar extent in all Irish dialects except IWM. It has been particularly common in ICF.

The environments for the lowering of //u// to /o/ may be analysed as follows:

C __ # (7) >> t (4) >> f, k, L (2) >> n, m, p, kr, g __
__ C __ r (12) >> l (4) >> x (3) >> θ (2) >> R (1)

Combining these results we conclude that the optimal environments for the lowering to /o/ of //u// before nonpalatals is:

C_x __ C_y C_x = # >> t >> f, k , L, C_y = r >> l >> x

This optimal environment for the lowering of //u// to /o/ is very similar to the optimal environment for the lowering of //o// to /a/ before nonpalatals (see chapter 5):

C_x __ C_y C_x = f >> # >> k, C_y = r >> l, s >> L

This suggests that there is a tendency for 'broad' vowels to be lowered in the following environments:

---

[26]De Bhaldraithe includes *toidheacht* /t'iəxt/ as an example of /C/ > /C'/. However, initial /t'/ in *toidheacht* could well be due to analogy with *teacht* /t'/.

C_x __ C_y C_x = f, k, # C_y = r >> l

It is unclear whether or not the lowering of //u// and //o// in these environments occurred as part of a chain shift. If so, this provides further supportive evidence for the dissection of the Irish phonological vowel space into a number of mini-phonological spaces each defined by micro-phonological environments.
Some instances of /o/ for //u// in table 6A.7 above may in fact derive from //o//. For instance IR /krot/, /gox/ may derive from **croth*, **goth* back formations based on the G sg or N pl *crotha, gotha*, see DIL s.v. *cruth, guth*. Alternatively, lowering to /o/ in *guth* /gox/ may be a further instance of the lowering of //u// before /x/ (< //θ// in this case). Cf. *lucht* /u/ ~ /o/ (IR).

Donegal //u// > /o/
The usual reflex of //u// in Donegal dialects is [o̝][27] which we analyse as /o/ (see chapter 2), except in monosyllables whose coda contain original //θ v//, e.g. *guth, dubh* in which case /u/ is retained. This development may be seen as one of laxing, see chapter 8 for discussion. Donegal //u// has therefore developed quite differently to //u// in other dialects. The lowering of //u// in Donegal dialects is the nearest example of unconditioned change in Gaelic that I am aware of in the vocalic system of Gaelic; it applies in all cases except in absolute word final position. There is also evidence of //u// having been unrounded in Connacht dialects and merging with original //o//. Indeed this led Hickey (1986) to assume incorrectly that //u// and //o// had merged in certain southern Connacht dialects. For a corrective response to Hickey, however, see S. Ó Murchú (1987).

The almost universal lowering and unrounding of //u// in Donegal dialects has not been discussed by scholars nor has a satisfactory explanation for the development been advanced. There are several possibilities. The lowering and centralisation of //u// can be seen as part of a general tendency in Donegal dialects to centralise short vowels. Compare for instance the common reflex [ɪ] of //i// in Donegal dialects. See chapter 8 for further discussion and the possibility of the centralisation of short vowels having led to a chain shift across the subsytems of long and short vowels in Donegal. One possible avenue for further research would be to assess the effects which varieties of Ulster and Scottish English have had on Donegal Irish. For instance, the general lax reflexes of Irish //i// in Donegal ([I], [ɪ]) are also to be found

[27]Ó Dochartaigh (1981) describes this vowel as an unround vowel with 'neutral lip position'.

in Ulster and Scottish English stretching from Donegal in the west to Edinburgh in the east.

//u// > /o/, /e/ / __ C'

Lowering to /o/ or /e/ also occurs before palatals in Irish dialects as is illustrated in the following table:

	IWM	IR	ICF	IT	IE	DD	TY
suirghe[28]	--	sri:	**el'**	--	--	i	i
uirthe	**er'~ir'**	**er'**	**or**	**or**	**or**	--	a, ɔ
muirnín	--	u:	u(:)	**o**	--	o	o
(f)uireasbhaidh	i	i	**o~e**	**e**	**e**	--	--
fuilingt	**ul~ol**	ol	**el'**	**el'**	**el'**	il'	ol, il
uile[29]	--	--	**e**	i	i	**e**[30]	**i**
cruimh	--	--	**ev'**	iv'	--	--	--
chuig	--	xig'	--	**heg'**	**eg'**	--	--[31]
duit	**o**	**o~e**	--	i	i	--	i

Table 6A.8

Lowering before palatals is particularly common preceding the segments /r' l'/, particularly before r'C' groups. It may be significant that the lowering occurs following /r/ in *cruimh* ICF.[32] Lowering in *duit* in Munster dialects could have been effected by the preceding velarised dental /d/. It should be noted, however, that forms which indicate an underlying /e/ for modern Irish *duit* are attested in Old Irish sources, e.g. *deit* Wb. 6a11, 12.[33] Realisations of *chuig* with /e/ could represent a further instance of lowering. However, analogy with the preposition *ag* /eg'/ cannot be ruled out.[34] In the case of modern Irish *uirthi*, we cannot be certain that this word contains original //u// although *uirre, uirthe* are the forms used in Classical Irish verse.[35]

[28]I have not included *uiread/oiread* here as it is uncertain whether it is a reflex of //o// or //u//, see appendix 7. Ó Cuív (IWM) and Quiggin (DD) derive it from //u// *uiread*.

[29]In phrases *sin uile* or *gach uile*. I have heard *sin uile* /e/ from Munster speakers. Instances of /e/ for *uile* could imply contamination with *eile* 'other'.

[30]In phrase *gach uile* [ga(x) fwel'ə].

[31]But /a/ *cneamhóg* 'maggot'.

[32]Cf. *r*-lowering discussed above.

[33]See DIL s.v. *do* for other forms such as *dait* (common in Ml.), *deit, det*. Note also *dit* Wb. 5b32. *Duit, dait, deit* are permitted forms in Classical Irish verse, see Knott (1922: lxxi).

[34]In fact the perpositions *chuig* and *ag* have fallen together in many Connacht dialects.

[35]See Knott (1922: lxxi).

The morphophonemic pattern //o// ~ //u// is well established since the Old Irish period, e.g. *bolg* > *builg, olc* > *uilc, corp* > *cuirp*. Synchronic reflexes of such inflected forms may be derived plausibly from original //u// in Munster and Donegal dialects, e.g. *cuirp* /kir'p'/ IWM: §114, DD: §283. However, it is not clear if reflexes of such inflected forms, which are regularly realised with mid vowels in Connacht dialects, e.g. *cuirp* /ker'p'/ IE, *uilc* /e/ ICF, are to be derived from original //u//.[36] It is possible that these mid vowel reflexes represent a lowering of original //u// although I think this is unlikely. I prefer to interpret mid vowels in oblique forms like *cuirp, uilc* (G sg, N pl) as representing underlying //o// rather than inherited //u//. In other words, the inherited morphophonemic pattern //o// → //u// has been replaced by a new one namely //o// → //o// based on words like *cos ~ cois(e)* etc.

__ F[+voice] [+labial]

//u// / __ v, ṽ

The development of //u// before labial fricatives in Irish dialects is illustrated in the following table:

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
__ v	uv#, u:V	uv#, u:V	u#, u:V,C	u#, u:V	uf#, u:V,C	u#, u:V,C	u:
__ ṽ	u:V	u:V	u:V,C	u:V,C	ũ:V,C	ũ:V,C	u:, ũ:
__ v'	iv'#, i:V,C'	ig'#, i:V,C'	iv'#,V; aiv'C'	iv'#,V	iv'#	iv'V,C'	iv'#,V,C'
__ ṽ'	iv'V, i:C'	iv'V, i:C'	i:C, iC'	iv'#,C'	iv'C'	ĩv'C'	ĩv'V,C'

Table 6A.9

The following statements may be made about labial fricatives preceded by //u//. Original //v//, //ṽ// have been vocalised in all Irish dialects although //v// has been retained in absolute word final position in monosyllables in some instances, e.g. *dubh*.[37] Word final (stressed) and intervocalic //ṽ'// has been retained in all dialects but has usually been vocalised preconsonantally except in Donegal dialects where it has been retained. Word final (stressed) //v'// has been retained in some Munster, Connacht and all Donegal dialects. Intervocalic //v'// has usually been lost in Munster dialects but has been retained in most Connacht and Donegal dialects. Preconsonantal //v'// is retained in some Connacht and all Donegal dialects, but vocalised in Munster dialects. Clearly then, //ṽ'// has been retained more frequently in Irish dialects than

[36]See ICF: §472, GCF: §41, p. 19, IE: §498.

[37]I have noted no instances of //u// before final //ṽ// in the monographs. A search of FGB using the Gléacht package shows that there are no words in modern Irish of the shape **umh* where * stands for any string of consonants.

//v'//, thus suggesting that the vocalisation of non-nasal //v'// occurred prior to the vocalisation of //ṽ'//. Since both //v// and //ṽ// have been universally vocalised in Irish dialects except in absolute word final position (stressed), it cannot be categorically stated, based on the synchronic reflexes of //uv//, //uṽ// alone, that the vocalisation of one occurred before the other. However, there is ample evidence to suggest that //v// was generally vocalised prior to //ṽ// in all Gaelic dialects.

Where //v ṽ// have been vocalised in Irish dialects, //u// has been universally lengthened to /u:/. In some dialects reflexes of //uv// and //uṽ// sequences are distinguished by the feature [+/– nasalised].[38] The vocalisation of //v'// prevocalically and preconsonantally, and of //ṽ'// preconsonantally (Munster and south Connacht only) has resulted in lengthening to /i:/.[39] This presupposes that //u// had been fronted to /i/ before the vocalisation of //v' ṽ'// in such instances.[40] This provides the following chronological ordering for dialects in which //v' ṽ'// has been vocalised:

(1) //u// → /i/ / __ v', ṽ'
(2) //v' ṽ'// → Ø

The divergent developments of //uv'V// and //uṽ'V// in Munster can be illustrated by *duibhe* /i:/ ~ *uimhir* /iv'/ (IWM). Otherwise, reflexes of //uv'// (> /iv'/) and //uṽ'// (> /ĩv'/) are distinguished only in DD, the latter forms being nasalised. The development of /aiv'/ in *cuibhriughadh* (ICF) where the fricative is not vocalised is curious.[41] The diphthongisation in this case may be compared with the tendency to diphthongise in these dialects before C'[+lab]C' groups cf. *oibre* /ai/. However, it also possible that /aiv'/ represents a contamination product of a progressive form /kair'u:/ and and a more conservative form /kiv'r'u:/. In the case of ICF /ai/ *cuibhriughadh*, the

[38]Such differentiation may have prevailed in all dialects at an earlier stage but this has not apparently survived in most Irish dialects, e.g. IWM, IR, ICF, IT. 'The nasalization of vowels and diphthongs which must have played an important part in the dialect with previous generations has to a great extent disappeared to-day.' (IWM: §185). 'Nasalisation is not a 'significant' feature in the vowel system.' (IR: §p. 61, n. 1). 'In the majority of cases nasalization is a non-significant transitional feature, incidental to the raising and lowering of the soft palate in the neighbourhood of nasal consonants.' (IT: §297); see also ICF: 46.

[39]Diphthongisation to /ai/ occurs in IR *cuimhin*. However, compensatorily lengthened /i/ is generally diphthongised to /ai/ in this dialect, particularly when preceding nasal segments.

[40]Unless of course /i:/ represents the result of smoothing of an earlier *i*-gliding diphthong */ui/.

[41]The same development occurs in *luibhre* /aiv'/ in southern Connacht dialects, see de Bhaldraithe (1985). This word derives from *cuimhriughadh* with //ṽ'//, see DIL s.v. *cuimrech*. However, it is clear from the forms cited in DIL that *mh* lost its nasality at an earlier stage of the language. Cf. /iv'/ *cuimhreann* < *comh* + *roinn* DD: §98.

development of a diphthong rather than lengthening to /i:/ suggests a number of possible explanations for the development:

(a) //u// was lowered to a mid vowel prior to the vocalisation of //v'//
(b) the form is to be derived from **coibhriughadh* with //o// rather than //u//
(b) diphthongisation took place before //u// was fronted to /i/: [ui] > /ai/
(c) the diphthong has developed from the off-glide [ᵘ] following /k/ and a following *i*-like vowel: [kᵘiv'ru:] > /kaiv'ru:/[42]

Lengthening and diphthogisation has been blocked in the case of ICF *luibhthearnach* where //v'// has been devoiced to /f/ by the following //θ'//.

Minor:

__ v, ṽ

Dubhairt is realised as /uə/ rather than /u:/ in IWM and may reflect an original disyllabic pronunciation, i.e. /du(w)ər't'/. //u// is realised as a long or a short /u(:)/ in *cumhang* IT; in IE it is realised with a short /u/.[43]

__ v', ṽ'

The only minor developments which I have noted are /əi/ *duibhré, duibheagán* IWM. It may be significant that these examples contain examples of pretonic //u//.[44] However, the diphthong in these cases may have arisen from the off-glide following velarised /d/ and a following *i*-like vowel. Cf. ICF *cuibhriughadh* /ai/.

Breatnach derives IR /kain'/ from **cuimhin* (< *cumhain*).[45] If /kain'/ does indeed derive from *cuimhin*, then we we have to posit the fronting of //u// to /i/ and the loss of intervocalic //ṽ'// with subsequent diphthongisation to /ai/ — which is the regular reflex of compensatorily lengthened /i/ in the vacinity of nasals in IR. However, we have noted that intervocalic //ṽ'// has been retained in Munster dialects following //u//, e.g. /iv'/ *uimhir.*[46] We might therefore expect /kiv'in'/ rather than /kain'/ in IR. The anomolous development in IR can be explained by positing the denasalisation of //ṽ'// in *cuimhin* prior to the vocalisation of the fricative.[47] The development of /ai/ as

---

[42]Compare /əi/ *duibhré, duibheagán,* IWM.
[43]Cf. *amharc* /aŋk/, IE: §174.
[44]Compare pretonic /əi/ *caorán, *draonán* for expected /e:/, IWM: §95.
[45]See IR: §107.
[46]Attested in IWM but not in IR.
[47]Cf. our discussion of *domhain* etc. in chapter 5.

opposed to /i:/ in the case of **cuibhin* (< *cuimhin*) may be explained perhaps by the tendency in IR to yield /ai/ rather than /i:/ as products of compensatory lengthened /i/ in nasal environments. The denasalisation of //ṽ'// in IR /i:/ *cuimhnigh, cuimhne* also explains the development of //u// in this case, where /ai/ would be the expected reflex of /iṽ'C'/ < //uṽ'C'//. Cf. /ai/ *n(e)imhneach*, chapter 7 but /i:/ *cuibhreach, cuibhdheasach*. Alternatively, /ai/ could perhaps derive from *cumhain* as follows: /kuṽin'/ > /ku-in'/ > /kuin'/ > /kain'/. That /kain'/ is a back formation based on *cuimhne* is not likely since *cuimhne* is realised as /i:/ not /ai/ in IR.

__ F[+voice] [+dental]\[+velar]

The development of //u// before the dental and velar frivatives is summarised in the following table:

	IWM	IR	ICF	IT	IE	DD	TY
__ ð/ɣ	u:V,C	u:V,C	u:V,C	u:V,C	u:V,C	u:V,C	u:C
__ ð'/ɣ'	i#, i:V	i#, i:V	i#, i:V,C	i#, i:V,C	i#, i:V,C	i:#,V,C	i:#,V

Table 6A.10

I have noted no instances of //u// preceding word final (stressed) //ð ɣ//.[48] The development of //uð/ɣ// and //uð'/ɣ'// has been regular on the whole throughout Irish dialects. The vocalisation of //ð'/ɣ'// has resulted in lengthening to /i:/. It is most probable that //u// had been fronted to /i/ prior to the vocalisation of /ɣ'/ < //ð'/ɣ'//.[49] The vocalisation of //ð/ɣ// has universally resulted in the lengthening of //u// to /u:/. This provides further corroborative evidence for rule 3A (see chapter 3) which states that the velar approximant /ɰ/ arising from /ɣ/ (< //ð/ɣ//) was vocalised to /w/ following the back rounded vowel //u//.

Donegal *udhacht(a)* with /ua/ rather than /uə/ is to be explained as deriving from the disyllabic form /uwaxd(ə)/, with /ax/ being the regular reflex of unstressed *-ach*.[50] The modern reflex of *udhacht(a)* in Donegal proves that final unstressed *-ach* was realised as /ax/ at the time of the reduction of disyllables to monosyllables in Donegal.[51]

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[48]Note, however, *lugha* [Luw] ('smaller'), *ugha* [uw] ('top cross-beam in house') for phonemic /Lu:/, /u:/ respectively, DD: §50.

[49]Unless of course /i:/ represents the result of smoothing of an earlier *i*-gliding diphthong */ui/.

[50]Cf. also DD *buidheach* /ia/ below.

[51]It is interesting to note that it is the Donegal form *uacht* rather than *úcht(a)* of other Irish dialects (e.g. /u:xtə/ ICF, IE) which has been adopted as the Modern Irish standard form (see FGB s.v. *uacht*). The adoption of *uacht* at the expense of *úcht* reflects the otherwise largely absent Donegal bias of the editor of FGB.

//u// before //ð'/ɣ'// has been fronted to /i/ in Munster and Connacht dialects without lengthening in a number of monosyllabic verbal roots (= imperatives) whose codae contain original //ð' ɣ'//, e.g. *suidh, luigh, guidh*. However, /i:/ occurs in Donegal dialects except in bound forms occurring before personal pronouns (DD: §112). //u// is in some dialects retained following /m/ in *amuigh*. In final open position (e.g. *buidhe*) a glide /ə/ is frequently present in some dialects, which suggests that disyllables were retained for a longer period in words of the shape //(C)Vð'/ɣ'ə//# and that such words were the last to be affected by the rule which reduced disyllables originally containing intervocalic fricatives to monosyllables, see IR: §24, IE: §325.

Minor:

All minor developments noted occur before the palatals //ð'/ɣ'//, the majority of which involve diphthongisation where we might expect vowel lengthening. In Munster dialects /e:/ occurs for an expected /i:/ in *buidheach(as)*. /e:/ may represent the result of the smoothing of /ia/ which would have regularly developed from */biɣ'ax/.[52] The synchronic Munster form suggests that forward stress may not have developed in this word before the vocalisation of //ð'/ɣ'//; otherwise we might expect */bi'jax/ or perhaps */b'a(:)x/.

IR has /iə/ in *bruidhean* for an expected /i:/. This could be a further instance of the 'interchange' between /i:/ and /iə/ before nonpalatals or could reflect a previous disyllabic realisation /bri-ən/.[53] Breatnach implies that /əi/ has developed from //u// in the future form *fuighir* although he does not include this form in his discussion of the historical development of sounds in Ring Irish. This form more likely derives from underlying //a// of the verbal stem *faigh*.

Guidhe

Guidhe is regularly realised as /giv'ə/ in Connacht dialects. The change //ð'// > /v'/ is attested in Middle Irish sources.[54] The form *guibhe* is itself attested in the fourteenth and fifteenth centuries.[55]

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[52]Cf. Donegal /ia/ *buidheach*.
[53]Cf. /d'i:l/ ~ /d'iəl/ *díol*, IR: §90.
[54]For details, see Breatnach (1994: §3.19, p. 235).
[55]See Mac Niocaill (1957: 223, 225); Skerrett (1966: 164-5).

__ SON#\+C[+hom]

No instances of //u// before //R L// have been noted in the monographs. There are, however, many instances of //u// occurring before various *r*-groups as the following table illustrates:

	IWM	IR	ICF	IT	IE	DD	TY
urlár	**u:** (PRT)	**əu** (PRT)	**au**	o	o	o	o
urnaighe	--	--	--	o	o	o	o
urlabhra	--	--	--	--	--	o	--
urla	--	--	--	--	--	--	o
ursa	u	--	--	o	--	--	o
tuirling	**u:**	**u:**	--	--	--	--	o
muirnín	--	**u:**	**u:**	o	--	o	o
buird	**u:**	--	**au**[56]	o	o	--	--
duirn	**u:**[57]	--	--	--	--	--	--

Table 6A.11

A clear distinction emerges between Munster and south Connacht dialects, and northern Connacht and Donegal dialects. Lengthening (but lengthening and diphthongisation in ICF) occurs before rC(')[+voice] groups (e.g. *urlár*), but not before rC[–voice] groups (e.g. *ursa*) in Munster and south Connacht dialects whereas //u// is lowered to /o/ and retained as a short vowel in north Connacht and Donegal dialects.

Before //N M//, lengthening to /u:/ occurs only in certain Munster and southern Connacht dialects (ICF), although there is much alternation between /u/ and /u:/ in ICF. *U*-gliding diphthongs develop only in IR. Otherwise, lengthening to /u:/ occurs in other Munster dialects. //u// is retained before //N M// in Connacht dialects, and lowered to /o/ in Donegal dialects, without lengthening or diphthongisation.

Before the palatals //L' N' M' ŋ'//, fronting and lengthening to /i:/ is the norm in Munster dialects, although diphthongisation occurs in IR. In IR /əi/ occurs before //L'// but /ai/ occurs before //N' M'//, thus illustrating the preference for upgliding diphthongs with /a/ onsets in IR in nasal environments. There is variation between short /i/ and lengthened /i:/ in southern Connacht dialects. Fronting to /i/ occurs in all other Connacht and Donegal dialects.

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[56]Derives from *boird* rather than *buird*.
[57]*duirnín*.

Minor

The only minor development which I have noted is the occurrence of /u:/ for expected /au/ in the word *cunntas* in IR.

Section B
Development of //u// in ScG

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //u// has been retained in most ScG dialects before nonpalatals other than fricatives and sonorants. Unrounding of //u// before nonpalatals occurs more frequently in Hebridean and west Highland dialects than in other ScG dialects. The words and phonological environments in which unrounding of //u// occurs before nonpalatals in ScG dialects are illustrated in the following table:

//u// > /ɯ/ / __ C ScG

	GL	DOH	S	R	GK	GA	ESG	EPG
turadh	ɯ	ɯ	ɯ	ɯ~u[1]	--	--	--	u
turas	ɯ	ɯ	--	--	--	--	--	--
urchar	ɯ	u	--	u	--	--	--	u
trusadh	u	ɯ	ɯ	--	u	u	--	u
trustar	--	ɯ	--	--	--	--	--	--
dà rud	--	ɯ	ɯ	--	--	--	--	--

Table 6B.1

Unrounding of //u// does not apparently occur in GK, GA, ESG or EPG. In other dialects, unrounding of //u// to /ɯ/ is particularly common in the environments: t __ r, tr __ s, and also in r __ d where /r/ represents a morphophonologically lenited /R/.[2] We will see below that //u// is frequently unrounded following the relatively neutral segments /t s/ before palatals.

//u// / __ C'

Before palatals original //u// has been retained and unrounded to varying degrees in ScG dialects. In GK and GA, there is also variation between /y/ and /i/ and in ESG, /i/ occurs alongside /u/. Borgstrøm (DOH, SR) is the only scholar to date who has attempted to describe the phonological conditions under which the developments //u// > /u/, /ɯ/ took place:

> In Barra, [ɯ] is used nearly only (sic) between dentals (except L, N, R), in which position [u] is not used. This rule leads to interchange of [u] and [ɯ] in some words: [Rut] "a thing" ~ dual. [da: rɯt]; [ûʃk'ə] "water" ~ with article [ə $^{N}d^{h}$ɯʃk'ə]; [dɯN'ə] "a man" ~ voc. [ə ɣûN'ə].' (DOH: §173, p. 139)

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[1]/ɯ/ Ault. /u/ RP.

[2]Compare *rud* /Rud/ ~ *dà rud* /rɯd/ (with lenition).

In SR, he notes:

> u > [ɯ] initially and after dentals, excepting [L], when there follows a palatal consonant, [l'] most excepted, and sometimes when a non-palatal dental follows. (SR: §19.1, p. 22)

> Short [ɯ] corresponds usually to O. Ir. u. It occurs approximately as in Lewis, Harris or Skye, initially or after a dental consonant when there follows a palatal consonant (except [l']), sometimes also before a following non-palatal dental. (SR: §12.1, p. 75)

A survey of Borgstrøm's material in addition to material from other dialectal sources enables us to considerably enlarge upon and enhance Borgstrøm's preliminary conclusions (based solely on DOH, SR) for the development of //u// in ScG dialects. The following tables illustrate the developments //u// > /u/, /ɯ/, /i/ in ScG.

//u// > /u/, /ɯ/ / __ C' ScG

	GL	DOH	S	R	GK	GA	ESG	EPG
__ d'								
cuid	u	u	--	--	u	u	--	u
cuideachd	u	--	--	--	--	--	u	--
cuidich	u	--	--	--	u	--	u	u
cuideam	u	--	--	--	--	--	u	u
druid	--	ɯ	--	--	u	--	--	u[3]
__ l'								
buileach	u	--	--	--	--	--	--	--
cuileag	u	u	--	--	--	--	--	u
cuilean	u	u	--	u	--	u	u	u
fuil	u	u	u	u	u	u	--	u
fuiling	u	u	--	--	--	u	--	--
muileann	ũ	--	u	u	u	u	u	u
tuil	u	--	u	u	u	--	--	u
uile	u	u	u	u	u	--	u	u
uilinn	u	--	u	u	--	--	--	u
duilich	u	ɯ	u~ɯ[4]	--	o	--	u	u
__ L'								
buille	--	u	--	--	--	--	u	u
duilleag	u	--	u~ɯ[5]	ɯ[6]	--	--	--	u
tuilleadh	ɯ	ɯ	ɯ	ɯ	--	--	i, ɤ[7]	u
__ n'								
cuin(e)	ũ	u	--	u	u	--	ũ	u
fuine	ũ	u	u	u	--	--	u	u
muin	ũ	--	--	--	--	--	--	u
muinchille	--	--	--	--	--	--	--	u
muineal	--	--	--	--	u	--	--	--
duine	ɯ	ɯ	ɯ	ɯ~u[8]	u	u, y[9]	ũ	u

[3] *druidean*.
[4] /u/ Sleat; /ɯ/ in other dialects.
[5] /u/ Sleat; /ɯ/ in other dialects.
[6] Cóig., Tar.
[7] /i/ B, G; /ɤ/ E.

	GL	DOH	S	R	GK	GA	ESG	EPG
__N'								
uinneag	ũ~ʉ̃	u[10]	ʉ	ʉ	--	--	--	u~ʉ
cruinneachadh	ʉ	ʉ	ʉ	--	--	(i~?) y	ɪ	ʉ (ɤ)
cluinnidh	ʉ	--	--	u	i~y	i~y	i:	ʉ
__r'								
cuir	u	u	--	u	ur	u	ur	ur
cuirm	u	--	--	--	--	--	--	--
fuireach	u	u	--	u	--	u	ur	ur
muir	u	u	u	u	--	u	ur	ur
tuireadh	--	--	ʉ	--	--	--	--	--
an-uiridh	--	--	ʉ	ʉ	--	--	i~ɤ[11]	u(r)
suirghe	ʉ	ʉ	--	--	--	--	ɤr	ur
__ʃ								
uiseag	--	u	--	--	u	--	--	u
uisge	ʉ	u[12]	ʉ	ʉ	u, y	u	u	u~ʉ
cuisle	u	--	--	--	--	--	--	--
__g'								
cuigeall	u	--	--	--	--	--	--	--
tuig	ʉ	u[13]	ʉ	ʉ	i~y	i~y	i	ʉ
thuige	i	i	--	ʉ	--	i (Ki)	--	--
__m'								
muime	--	--	u	--	--	--	--	ui
cuimseach	--	--	ʉ (Km)	--	--	--	--	--
__C'(various)								
tuit(eam)	ʉ	u[14]	u	u	i~y	u	u	u
suidhe	ʉ	u	ʉ	u	u	(i?)~y	i:	ʉ, ɤ
suipear	ʉi	u	ʉ	ʉ, ʉi	i~y	--	i	ʉi,ʉ,i
cluich	u	--	u	u	u	--	i	u
bruith	i	u, ʉ[15]	ʉ	--	--	u	i	u[16]
thuice	i	i	--	ʉ	--	--	--	--

Table 6B.2

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[8]/ʉN'/ generally but /un/ Duir.
[9]/y/ Ki.
[10]/u/ Ba; /ʉ/ Ha.
[11]/i/ B, G ~ /ɤ/ E.
[12]/u/ Ba; /ʉ/ Ha.
[13]/u/ Ba; /ʉ/ Ha.
[14]See DOH: §315 no. 3. The isogloss for /u/~/ʉ/ in *tuiteam* appears to be between Benbecula and North Uist resp.: /ʉ/ in North Uist and Harris, /u/ in Benbecula, South Uist, Barra.
[15]See DOH: §303.1.
[16]But *bhruith* (PAST) /u/~/ʉ/.

Table 6B.2 may be analysed as follows:

	GL	DOH	S	R	GK	GA	ESG	EPG
Total returns	39	28	24	25	20	17	26	37
/u/	26	20	12	16	15	12	16	24
/u/ %	67	71	50	64	75	71	62	65
/ɯ/ (/ɤ/, /y/)	11	7	14	10	5	5	3	7
/ɯ/ (/ɤ/,/y/) %	28	25	58	40	25	29	12	19
/i/	3	2	0	0	4	4	9	1
/i/ %	8	7	0	0	20	24	35	3

Table 6B.3

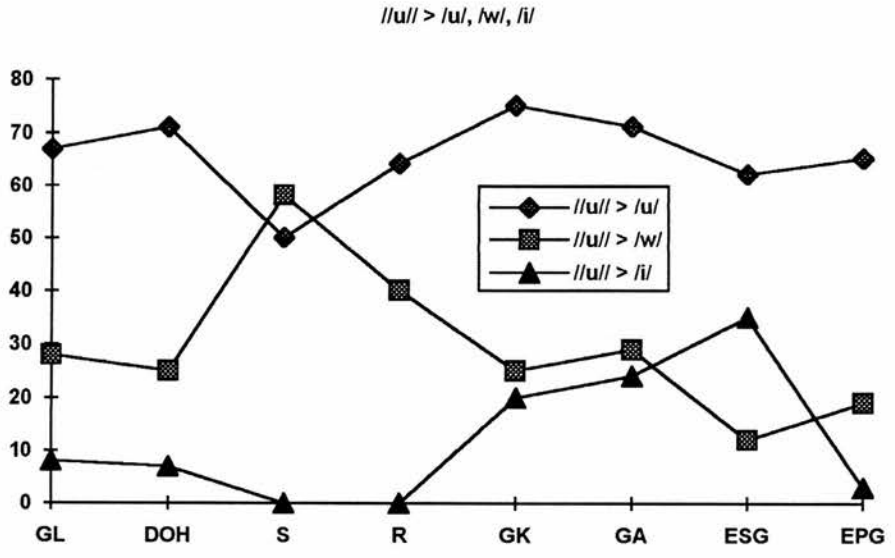

Chart 6B.1

Using /w/ as a cover symbol for /ɯ ɤ y/, we obtain the following results:

/u/ >> /w/ >> /i/	GL, DOH, R, GK, GA, EPG
/w/ >> /u/ >> /i/	S
/u/ >> /i/ >> /w/	ESG

We may conclude that for the majority of dialects, /u/ has been retained in the prepalatal position more commonly than it has been unrounded or fronted. The only exception to this is Skye, where unrounding to /ɯ/ appears to be marginally more common. Fronting and unrounding to /i/ has been most common in peripheral dialects (GA, GK, ESG), particularly in ESG.

The environments in which the //u// is unrounded and fronted may be analysed as follows (ignoring environments in which the change is attested in table 6B.2 for only one word):

(A) Following consonantal environment:

	_ d'	_ l'	_ L'	_ n'	_ N'	_ r'	_ ʃ	_ g'	_ m'	Average %
Total	17	49	13	24	18	30	13	13	3	
/u/	16	47	7	21	4	23	9	2	2	
/u/ %	94	96	54	88	22	77	69	15	67	65
/ɯ,ɤ,y/	1	2	7	4	13	7	5	7	1	
/ɯ,ɤ,y/ %	6	4	54	17	72	23	38	54	33	33
/i/	0	0	1	0	4	1	0	6	0	
/i/ %	0	0	8	0	22	3	0	46	0	9

Table 6B.4

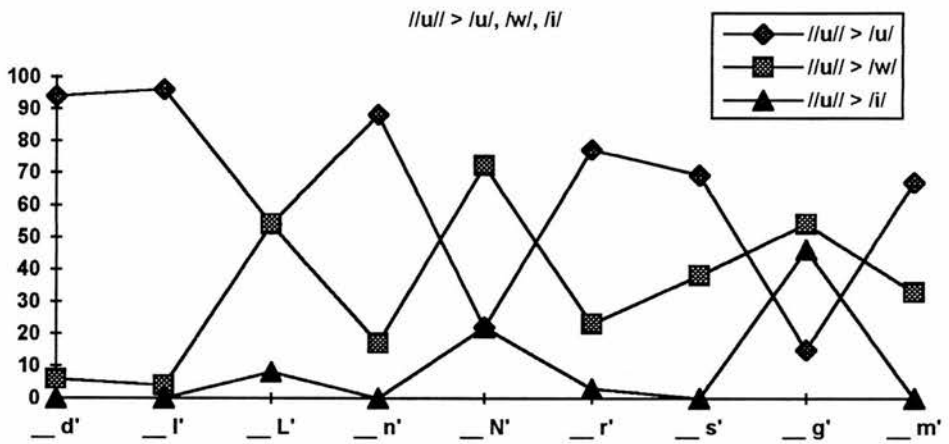

Chart 6B.2

This provides the following ordering of optimal environments for each of the changes:

//u// > /u/ / __ l' >> d' >> n' >> r' >> ʃ >> m' >> N' >> g'

//u// > /ɯ/, /ɤ/, /y/ / __ N' >> L' = g' >> ʃ >> m' >> r' >> n' >> d' >> l'

//u// > /i/ / __ g' >> N' >> L' (>> d' = l' = n' = r' = ʃ = m')

We also note that //u// is retained as /u/ more commonly than it is unrounded or fronted before the segments __ d' l' n' r' ʃ m'. Similarly, //u// is unrounded or fronted more commonly than it is retained before the segments __ N' g'. Unrounding and retention of //u// as /u/ occurs to a similar degree before the segment /L'/. Fronting to /i/ ocurs most commonly before the segments __ g' N' L'.

(B) Preceding consonantal environment:

	b__	kL_	k__	d__	f__	m__	s__	h_	t__	#__	Average %
Total	4	12	40	18	22	20	19	7	28	27	
/u/	4	6	39	12	22	20	5	0	13	22	
/u/%	100	50	98	67	100	100	26	0	46	81	67
/ɯ,ɤ,y/	0	4	1	9	0	0	12	2	14	9	
/ɯ,ɤ,y/%	0	33	3	50	0	0	63	29	50	33	26
/i/	0	4	0	0	0	0	4	5	5	0	
/i/%	0	33	0	0	0	0	21	71	18	0	14

Table 6B.5

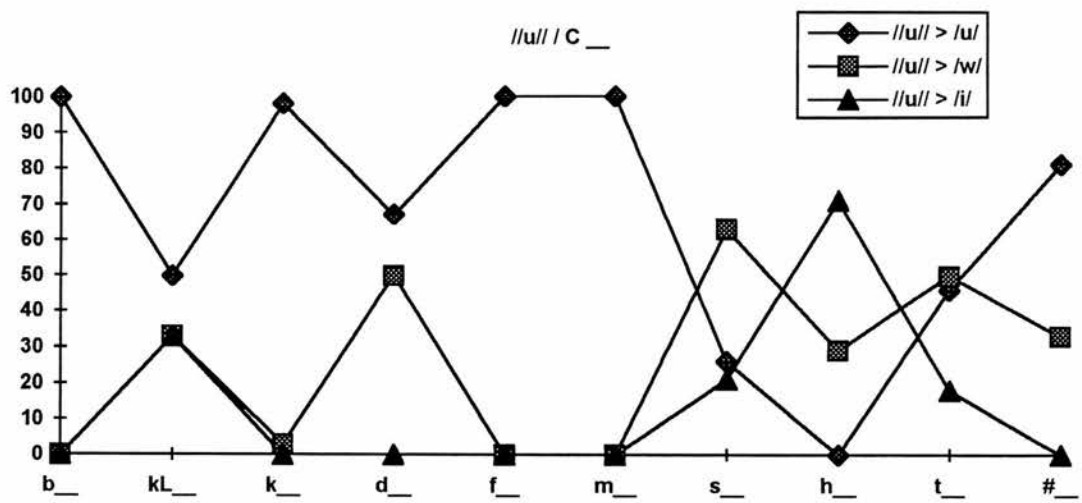

Chart 6B.3

This provides the following ordering of optimal environments for each of the changes:[17]

//u// > /u/	b = f = m >> k >> # >> d >> kL >> t >> s __
//u// > /ɯ ɤ y/	s >> d = t >> kL = # >> h __
//u// > /i/	θ >> kL >> s >> t

We also note that //u// is retained as /u/ more commonly than it is unrounded or fronted following the segments b f m k __. Similarly, //u// is unrounded or fronted more commonly than it is retained following the segments d s θ t __. Fronting to /i/ ocurs most commonly following //θ// in the prepositional pronouns *thuige, thuice*. Combining the results obtained for the most favourable environments for (a) the

[17]We do not include in the following orderings consonantal environments for which a value of 0% occurs.

retention of //u// as /u/, (b) unrounding to /ɯ/, /ɤ/, fronting to /y/, (c) fronting and unrounding to /i/ in the macro-environment C __ C', we conclude that the optimal environments for each of these developments are as follows:

(a)
//u// > /u/ / C __ C' C = b = f = m >> k >> # >> d >> kL >> t >> s __
C' = __ l' >> d' >> n' >> r' >> ʃ >> m' >> N' >> g'

(b)
//u// > /ɯ ɤ y/ /C __C' C = s >> d = t >> kL = # >> h __
C' = __ N' >> L' = g' >> ʃ >> m' >> r' >> n' >> d' >> l'

(c)
//u// > /i/ / C __ C' C = h >> kL >> s >> t __
C' = __ g' >> N' >> L' (>> d' = l' = n' = r' = ʃ = m')

If we include only those environments whose percentage value is greater or equal to half the average percentage score for each of the developments (a), (b) and (c) in tables 6B.4-5 above, we get the following simplified optimal environments for each of the developments of //u// / C __ C':

(a)
//u// > /u/ / C __ C' C = b = f = m >> k >> # >> d __
C' = __ l' >> d' >> n' >> r' >> ʃ >> m'

(b)
//u// > /ɯ ɤ y/ /C __C' C = s >> d = t >> kL = # >> h __
C' = __ N' >> L' = g' >> ʃ >> m'

(c)
//u// > /i/ / C __ C' C = h >> kL >> s >> t __
C' = __ g' >> N'

Some interesting patterns emerge when we consider these optimal environments together. We note that each development depends on both the preceding and following consonantal environment. There is almost complete complementary distribution between /u/ and /ɯ ɤ y i/ in terms of the micro-phonological environments in which each occurs. //u// is generally retained when preceded by labials and velars and when followed by patalalised apicals /l' d' n' r' ʃ/. However, unrounding and fronting tends to occur when preceded by the relatively neutral segments /s d t/ and //θ// > /h/, and when followed by palatal non-apicals /N' L' g'/. There is a clear articulatory difference between /N' L' g'/ and /l' d' n' r' ʃ/. The former set of segments are either true palatal segments (/g'/) or else have strong secondary palatal

articulations (/N' L'/). For the latter set of segments there is no contact with the hard palate, only raising of the tongue towards the hard palate. In other words, the latter set have a 'weaker' palatal articulation. This observation shows that unrounding and fronting has occurred most commonly in ScG before segments whose secondary palatal articulation has been 'strongest', although unrounding has frequently been blocked when //u// is preceded by labials or the velar /k/.[18]

In some cases it appears that the preceding consonant has been the most significant factor in the retention or unrounding of //u//. For instance //u// seems always to be retained when preceded by a labial or a velar /k/ despite the following segment, e.g. *buille* /u/, where we might expect unrounding preceding //L'//. We note also that //u// is sometimes retained when preceded by /d t s/ despite the fact that these preceding consonantal environments tend to have the effect of unrounding a following //u// e.g. *duilich* (GL), *duilleag* (GL), *tuit(eam)* (DOH, SR), *suidhe* (DOH) etc. (see table 6B.2 above). It may be significant that //u// appears always to be retained in the word *tuil(e)*.[19] A consideration of other instances of //tuC'// shows that //u// > /ɯ/ occurs particularly in words which are frequently lenited, e.g. *thuig* (PAST), *thuit* (PAST), thus suggesting that a preceding /h/ (< //θ//) is a significant contributory factor in the unrounding of //u//. In support of this we may add that unrounding of //u// occurs frequently following //s//, the lenition product of which is also /h/. The retention of //u// in the word *tuile* may in part be due to its relatively rare occurrence in lenited environments.[20]

//u// > /i/, /y/

Fronting of //u// to /i/ has occurred most notably in ESG, GK, GA, although fronting to /y/ is also attested in GK, GA. It is clear from our discussion above that fronting to /i/, /y/ occurs in similar environments to the unrounding of //u// to /ɯ/. It is most likely that fronting to /i/ involved the intermediate stage of unrounding to /ɯ/ (or fronting to /y/ in GK, GA). Borgstrøm notes that the fronting of //u// to /i/ is a characteristic of northern Lewis dialects, in particular in Ness. He notes /i/ in the following words: *bruidhin, duine, cnuic, cruimh, cruinneachadh, tuigsinn, tuilleadh, tuiteam, uinneag, uisge*, see DOH: §141.2, p. 120. Borgstrøm argues that the

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[18]Unrounding to /ɯ/ occurs commonly before the palatal /j/ e.g. in *guidhe*, as we shall see below.

[19]This is discussed further below. Borgstrøm notes for Skye dialects that the environment C __ l' does not favour the change //u// > /ɯ/. However, he reports /ɯ/ in the word *duilich* for dialects other than Sleat, see SR: §18.1.

[20]A similar explanation was advanced above for the non-palatalisation of /t/ in Irish *tuile vis-à-vis* /t'/ in *tuilleadh* etc.

development in such instances was unrounding of //u// to /ɯ/ followed by fronting to /i/, see DOH: §289, p. 203.

There is a small number of words in each dialect investigated which have fronted original //u// to /i/ before palatals. The following table lists the words involved:

	GL	DOH	S	R	GK	GA	ESG	EPG
thuige	**hi**	**#i**	--	hɯ	--	**i** (Ki)	--	--
thuice	**hi**	**#i**	--	hɯ	--	--	--	--
tuig	ɯ	u	ɯ	ɯ	**i~y**	**i~y**	**i**	ɯ
tuit	ɯ	u	u	u	**i~y**	u	u	u
tuilleadh	ɯ	ɯ	ɯ	ɯ	--	--	**i, ɤ**	u
bruith	**i**	u, ɯ	ɯ	--	--	u	**i**	u
cruithneachd	--	--	**i**	**i**	--	--	--	ɤ
cruinneachadh	ɯ	ɯ	ɯ	--	--	(i?~)y	**i**	ɯ (ɤ)
cnuic	ɯ̃	ũ	--	ɯ̃	u	y	--	ɔ̃, ũ
cluinnidh	ɯ	--	--	u	**i~y**	**i~y**	**i:**	ɯ
truime	ɯ̃	**i**	--	--	y	--	--	əi, ɯi
luime	--	--	**i**	--	--	--	--	o
an-uiridh	--	--	ɯ	ɯ	--	--	**i~ɤ**[21]	ur
suipeir	ɯi	u	ɯ	ɯ, ɯi	**i~y**	--	**i**	i,ɯ,ɯi

Table 6B.6

It is noteworthy that fronting is attested in three instances following the consonant group Cr __ e.g. *bruith, cruithneachd, truime*. The change is attested in three of the dialects investigated in the prepositional pronouns *thuige, thuice* which may imply a tendency for the fronting following the segment /h/.[22] Diphthongisation to /ɯi/ is common in the word *suipeir*.

[21] /i/ B,G, ~ /ɤ/ E.

[22] I take *uige* /ig'ə/, *uice* /ix'k'ə/ to have developed from *thuige, thuice* originally from *chuige, chuice*, perhaps by analogy with *aige, aice* etc.

Lowering of //u//

Lowering of //u// is extremely rare in ScG dialects. I have noted the following examples:

Lowering of //u// in ScG		
/u/~/o/	ucht	GL
/ð/	cumanta	GL
/o/	fulaisg	ESG[23]
/ɤ/	Murchadh, tubaiste	GL
/ð/	cumhachd	GL
/ɔ̃/	umhail	EPG
/ɛ̃/	cruimheag	Skye
/ɤ/	suirghe, tuillidh, an-uiridh	ESG (E)
/ɤ/	cruithneachd	EPG

Table 6B.7

Lowering has taken place before the segments /l x (b) (m)/ in GL. There appears to be a tendency to lower //u// in nasal environments in some dialects, e.g. *cumanta, cumhachd* (GL), *umhail* (EPG), *cruimheag* (S), *an-uiridh* (ESG). Lowering occurs before /r'/ in *suirghe, an-uiridh* (ESG) and before /r/ in *Murchadh* (GL). Lowering also occurs following the cluster /kr/ in *cruimheag* (S), *cruithneachd* (EPG). Lowering of //u// occurs before svarabhakti *r*-groups in *Murchadh* (GL), *suirghe* (ESG).

__ F[+voice] [+labial]

The development of //u// before labial fricatives is summarised in the following table:

	GL	**DOH**	**S**	**R**	**GK**	**GA**	**ESG**	**EPG**
_ v	u#,V; u:C	u#,V; u:C	u#,V	uV	u#	uV	u:C	u#
_ ṽ	ũV	ũV	ũV	--	--	uV	--	ɔ̃V
_ v',ṽ'	jɯV,#; əiC	uiC(Ba)~əiC(Ha)	ɯiC (əiC)	uiC	u#,V; y~iC, øiC	yiC	ĩ:C	ujV, u:C, u·iC[24]

Table 6B.8

All labial fricatives have been vocalised following original //u// according to our sources utilised in the present study. //u// has been retained as /u/ before word final

[23] B, G.

[24] /u·i/~/ɯ·i/~/ɤ·i/ *cuimhne*.

and intervocalic //v//[25] and lengthened to /u:/ before preconsonantal //v//. //u// has been retained, usually as a nasalised vowel /ũ/ preceding intervocalic //ṽ//. I have noted no examples of //u// before word final or preconsonantal //ṽ//. In Barra *ubhall* is realised as /u:L/ where we might expect /u-əL/.[26] The long vowel in this case may represent the coalescence of disyllabic /uwə/ although such occurrences are uncommon in this dialect. It may represent a back formation **ubhl* (or perhaps **ubhla* with caducous schwa) based on the plural form *ubhlan* /u:/.

//u// has not generally been retained before //v', ṽ'// but note *luibh* /Luj/, *luibheannan* /Lu-iNən/ GK. Most of the examples which I have noted contain preconsonantal //v' ṽ'//, the major development in these instances being the development of *i*-gliding diphthongs, e.g. /ui/, /ɯi/, /yi/ (GA) and in some cases /əi/. In GK, however, there is variation between /i/, /y/, /ɸi/ in the word *cuimhne*. Lengthening to /i:/ occurs in *cuimhne* (ESG). In GL unrounding to /ɯ/ is witnessed in *cnuimh* and *duibhe*.

Minor developments

//u// has been lowered to either /õ/ or /ɔ̃/ before original //ṽ// in a small number of words, e.g. *cumhacht* /õ/ GL, *umhail* /ɔ̃/[27] (EPG). Lowering also occurs before //ṽ'// in the word *cruimheag* /ɛ̃/ in Skye.

__ F[+voice] [+dental]\[+velar]

The development of //u// before dental/velar fricatives is summarised in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
_ ð/ɣ	u#,V	u#,V	u#	u#	uV	uV	u#	u#
_ ð'/ɣ'	ujV,ɯjV	uj#,uiV,C	uiV,ɯiV	uj#,uV	uV,(iV)	uV,yj#, y~iV	ɪ#, i:V,C[28]	ui,ɯi~ɤi

Table 6B.9

/ɣ/ < //ð/ɣ// has not been retained following //u//. /ɣ'/ < //ð'/ɣ'// is in some dialects retained as a consonantal glide /j/, e.g. GL, DOH, R, GA. //u// has been retained before word final and intervocalic //ð/ɣ// in all ScG dialects. I have noted no examples of //u// occurring before preconsonantal //ð/ɣ// in the monographs. However, *ughdar*,

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[25]Note /duan/ *dubhan*, EPG.
[26]See DOH: §172.2.
[27]'attention'.
[28]Also /ɪ:/.

ughdarras are regularly realised with /u:/ in ScG dialects.[29] There are three major developments preceding original //ð'/ɣ'//: (a) //u// is retained as /u/ or unrounded to /ɯ/, /y/ or /i/ in some dialects, e.g. GL, R, GK, GA; (b) //u// is diphthongised to /ui/ or /ɯi/, e.g. Ba., S, EPG; (c) //u// is fronted /i/, and further lengthened to /i:/ (especially in ESG but cf. GK).[30] The following table illustrates the distribution between /u/, /ɯ/, /i(:)/ and the various types of *i*-gliding diphthongs which occur as reflexes of original //uð'/ɣ'// sequences:

//u// / __ ð' ɣ'

	GL	DOH	S	R	GK	GA	ESG	EPG
buidhe	u	ui	ui	u	u	--	i:	ui
buidheach	u	--	--	--	--	--	--	ui
muidhe	u	--	--	u	--	u	--	ui
a-muigh	u	uj	--	u	--	--	ɪ	--
guidhe	ɯ	ui	--	--	--	u	i[31]	--
suidhe	ɯ	ui	ɯi	u	u	i~y	i:	ɯi~ɤi
bruidhinn	ɯ	ɯ	ɯi	--[32]	y (La)	u	ɪ:	ɯi, ɛi
*cruidh	ɯj	--	--	ɯ[33]	--	--	--	--

Table 6B.10

We observe from the above table that /u/ and /ui/ occur usually following the labials /b m/ and /ɯ/, /ɯi/, /i/, /y/ occur otherwise, in our examples following /s br kr/. This accords with the conclusions reached above with regard to the distribution of /u/ and /ɯ/ in the environment / C __ C'. We noted that /u/ was the norm in this environment following the velar stop /k/ and we might therefore expect /u/ following /g/. However, there is fluctuation between /ui/, /ɯ/, /i/ in *guidhe* which suggests that a following /j/ < //ð'/ɣ'// may have been a stronger influencing factor in the unrounding and fronting of //u// following /g/.

Minor:

The most significant minor development of //u// before //ɣ// occurs in the word *lugha*, the comparative, superlative form of the adjective *beag*:

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[29]Personal observation but see also PDSG s.v. *ughdar*.

[30]Note also that 'after /r/, /i/ is used where /ɯ/ is expected' in some Ross-shire dialects, e.g. Cóigeach, Tanera, SR: §117.5.

[31]sic.

[32]/i/ *bruidhinn* Cóig., Tan.

[33]/i/ *cruidh* Cóig., Tan.

	GL	DOH	S	R	GK	GA	ESG	EPG
lugha	ɯ	ɯ	--	ɯɣ[34]	i	y (~i?)	əu~ʏ:[35]	--

Table 6B.11

It was noted earlier that the most favourable environments for the change //u// > /ɯ/ in the environment / C __ C was as follows: t __ r, tr __ s, r __ d. We have noted no other instances of the unrounding of //u// to /ɯ/ following /L/ before nonpalatals. In light of the forms *laugi, laigiu* with palatal /ɣ'/ in Old Irish,[36] it is tempting to speculate that the ScG forms (with /ɯ/, /y/, /i/) derive from **luighe* rather than from *lugha*.[37] However, that //u// may be unrounded to /ɯ/ before /ɣ/ (while /ɣ/ is still retained) is shown by the Ross-shire forms /Lɯɣə/, /Lʏɣə/ (SR: 92).

__ SON#\+C[+hom]

I have noted no examples of //u// occurring before original //R//. However, instances of //urC[+voice]// do occur in which case //u// is usually lengthened to /u:/ except in GK and GA where a short vowel /u/ is retained. Lengthening does not occur before rC[–voice].[38] The word *urlar* 'floor' is frequently realised as /ũ:Lar/ in ScG dialects[39] where the /r/ has been lost and //u// nasalised. This form may be explained as a result of dissimilation between the two /r/ segments, the first of which changes to /n/ (or possibly /N/ before *l*). This implies the development *urlar* > **unlar*.[40] On the effacement of *n* before consonants, see further below. The diphthong /ɔu/ occurs in Kilmuir, (Skye) for *urlar*.[41] Borgstrøm refers to the Kilmuir form as 'curious'.[42] If we take **unlar* as the underlying form, the development //u// > /ɔu/[43] is the expected development for //u// before //N// in Lewis dialects.[44] This particular development may be added to those other features which connect Kilmuir (and other north eastern Skye dialects) with Lewis dialects.[45] Unfortunately *urlar* is not attested in GL or in DOH for a Lewis dialect.

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[34]Also /ʏɣ/, see SR: 92.
[35]/əu/ B, G ~ /ʏ:/ E.
[36]See DIL s.v. *bec*.
[37]The ESG forms appear, however, to derive from *lugha*.
[38]For a discussion of /u:/ in *tuirseach*, see chapter 5.
[39]This is the case in Ba, Skye, ESG, EPG.
[40]Borgstrøm suggests this in DOH: §172.3; SR: §18.3. It should be noted that in the sequences //Vns/ʃ// that //n// is frequently realised only in the nasalisation of //V//, e.g. *innse* /ĩ:ʃə/, *ionnsachadh* /jũ:səxəɣ/.
[41]Borgstrøm notes that /ɔu/ 'can apparently not be nasalised', SR: §27.
[42]SR: §27.
[43]Admittedly we might expect nasalisation of the diphthong here but see Borgstrøm's comments above.
[44]See below.
[45]For a discussion of such features, see SR: §107.

	GL	DOH	S	R	GK	GA	ESG	EPG
urlar	--	ûːLar	ʊ̃ːLar, ɔuLar[46]	--	--	uLar	fjʊ̃ːLar	ʊ̃ːLar

Table 6B.12

The only example which I have noted of //u// occurring before /L/ is *a-null* 'over there (motion)' which derives, however, from Old Irish *a-nunn*. Oftedal explains /L/ from /N/ in this word as 'analogy with the antonym /NãũL/ OI *anall'* (GL: §85, p. 93). The change /N/ > /L/ could equally be explained as a case of dissimilation between both nasal segments in *a-nunn*. The general development of //u// before //(L) N M// is lenghtneing to /uː/ in most dialects. However, original /u/ is retained in GK, (GA), and EPG. Diphthongisation to /ɔ̃ũ/ occurs in Lewis dialects before //N M// and //L// in *a-null*.[47]

Before //rˈC[+voice]//, /u/ has been lengthened to /uː/ in most dialects,[48] e.g. /uː/ *buird* (G sg, pl), *duirn* (G sg, pl), although a short vowel /u/ is retained in the latter in GA and EPG.

	GL	DOH	S	R	GK	GA	ESG	EPG
buird	uː	uː[49]	uː	uː	--	uː	uː[50]	uː
duirn	--	uː[51]	uː	uː	uː	u	--	u

Table 6B.13

Before //Nˈ Mˈ ŋˈ Lˈ//, the development of *i*-gliding diphthongs is the norm. Fronting and lengthening to /iː/, however, occurs in ESG. Short vowels occur also in GK, GA, EPG, although instances of diphthongisation also occur in these dialects. In GK and EPG diphthongisation occurs regularly only before //Mˈ//.[52] In GA dipthongisation occurs before //Nˈ Mˈ ŋˈ// but /u/ is retained before //Lˈ//. The diphthong which occurs in Lewis and in Harris dialects is /əi/ although /ui/ is regular following labials.[53] In Barra /ui/ is the norm in these environments. In Skye, Ross-shire and EPG both /ui/ and /ɯi/ occur. In these dialects, /ɯi/ appears commonly following /kr/, e.g. *cruinn*;

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[46]Km.
[47]Compare /ɔu/ **unlar* Kilmuir, Skye and discussion above.
[48]Lengthening is also attested in *tuirseach* /uː/ in some ScG dialects but cf. /u/ EPG. For discussion of the development in this word, see chapter 5.
[49]/uː/ in Lewis, Bernera, Harris, Uist, Benbecula, Barra, DOH: 236, no. 7.
[50]The forms *boird, bordchan* are also used in the plural, ESG: 88.
[51]/uː/ in Lewis, Bernera, Harris, Uist, Benbecula, Barra, DOH: 237, no. 13.
[52]Note also *muing* /mu·i/ EPG where original //ŋˈ// has been lost.
[53]See DOH: §180.1 *muilneir* /ui/. Cf also *muing* /ʊ̃ĩ/ GL.

/ui/ appears commonly following labials, e.g. *muilneir, muim(e)*.[54] In GA /yi/ is the norm. It is interesting to note that /u/ is retained in oblique *tuill* in GK, GA and EPG.[55]

Minor:

A preconsonantal nasal is frequently effaced. However, the nasal articulation is usually retained in the nasalisation of the preceding vowel. The effacement of the nasal gives rise to compensatory lengthening or diphthongisation. The results of the compensatory lengthening/diphthongisation which arises as a result of the effacement of *n(n)* is different to that which takes place before original //N//. Compare the following pairs:

	n(n) → ∅			
GL	*unsa*	/ũ:sə/	*punnt*	/põũNd/
GK	*uinnseann*	/yiʃəN/	*punnt*	/punt/
GA	*uinseann*	/y:ʃəN/	*cruinn*	/kryin'/
EPG	*uinnsean*	/ũ·iʃn/	*cruinn*	/krɯ(i)n'/

Table 6B.14

In GA, where diphthongisation is common before //N' M' ŋ'//, there is no compensatory lengthening in the word *muinntir* /mutʃir/ when the nasal is lost.[56] In ESG /i/ occurs exceptionally in the word *muilneir*, perhaps by analogy with *muilinn*? Most dialects diphthongise original //u// in *muilneir* which clearly implies that the diphthongisation took place prior to the assimilation of /l'/ and /n'/ (/N'/?) or at least at a time when a morpheme boundary was still perceived to be present following the original //l'//. Had this occurred in ESG, we would expect /i:/ in this case as /i:/ is the regular reflex of //u// in similar environments. The development of *muilneir* in ESG may imply that lengthening before //L'// took place after the assimilation of //l'// and //n'// (//N'//?) in the word *muilneir*. Furthermore the fronting of //u// to /i/ does not occur before original //l'// but does occur before original //L'//, e.g. in the word *tuilleadh*. The occurrence of /i/ in *muilneir* /mwil'ar/ implies the following development for ESG:

/mul'n'ar'/ > /muL'ar'/ > /miL'ar'/ > /mil'ar/[57]

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[54]We have already noted the tendency for /ɯ/ to occur for original //u// following /kr/ and for /u/ to ocur following labials.

[55]It was noted above that unrounding was particularly common following /t/ in the prepalatal position but that this unrounding was marginally less common in GK, GA, ESG and EPG dialects.

[56]See GA: §237.

[57]Original //L'// and //l'// have merged as /l'/ in ESG (: 44-7). Compare GL *muilneir* /mə̃iL'ar'/ with medial /L'/ < //l'n'//.

Section C
A Comparison of the Development of //u// in Irish and ScG

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //u// has generally been retained in Irish and ScG before nonpalatals other than fricatives and sonorants. The biggest difference to emerge between Irish and ScG dialects is that //u// has been fronted to /i/ universally before palatals in all Irish dialects but has been retained in certain prepalatal environments in ScG. Fronting to /i/ is only marginally attested in ScG dialects and occurs most commonly following /s t h/, and /Cr/ groups. //u// has been unrounded to /ɯ/ in ScG (and fronted to /y/ in GK, GA) most commonly following the neutral segments /s d t h/ and when followed by palatal non-apicals //N' L' g'//. We noted that unrounding occurred also in the nonpalatal environments t __ r, tr __ s in ScG. Similarly, we concluded that //u// was generally retained in ScG when preceded by labials and velars and when followed by patalalised apicals /l' d' n' r' ʃ/. The ScG evidence suggests that the development of //u// before palatals occurred in several stages. Fronting to /i/ is likely to have involved the intermediate stage of /ɯ/ (in some dialects /y/, e.g. GK, GA). Likewise, it is clear that the unrounding (and fronting) of //u// was environmentally conditioned and tended to occur most frequently before the true palatals /g' j/ and before strongly palatalised segments such as //N' L'// when preceded by neutral segments such as /s d t h/. Based on this evidence, it is possible that unrounding of //u// in ScG may have originated in these environments, i.e. when followed by the palatal segments (/N' L' g' j/) and preceded by neutral segments (/s d t h/). It may have spread from such environments to words of the shape C __ C' where C was a neutral consonant /s d t h/, and C' was a palatalised apical /l' d' n' r' ʃ/. It does not appear to have spread as yet to the environment C[+labial] __ C[+palatal]. This implies the following tentative ordering for the unrounding of //u// in ScG dialects: '

(1) //u// → /ɯ/, /i/ / C[–velarised] __ C[+palatal], C[+son] [+palatalised] [+tense]

(2) //u// → /ɯ/, /i/ / C[–velarised] __ C[+palatalised]

It is possible, though unprovable at the present state of knowledge that the universal fronting and rounding of //u// in Irish dialects may have proceeded along lines similar to ScG, or at least that it occurred in a series of disparate stages according to phonological environment. The retention of /u/ following /k m/ in some Irish dialects (particularly following Donegal /k/) suggests that //u// may have been retained longer following /k m/. This suggests a tentative ordering for the fronting of //u// to /i/ in

Irish dialects (and a tentative prediction of the unrounding and fronting of //u// in ScG dialects in the future):

(1) //u// → /i/ / C[–velarised] __ C[+palatal], C[+son] [+palatalised] [+tense]
(2) //u// → /i/ / C[–velarised] __ C[+palatalised]
(3) //u// → /i/ / C[+velarised] __ C[+palatal]
(4) //u// → /i/ / C[+velarised] __ C[+palatalised]
(5) //u// → /i/ / C[+velar]\[+labial] __ C[+palatal]
(6) //u// → /i/ / C[+velar]\[+labial] __ C[+palatalised]

There is some evidence to suggest that the first stage in the unrounding and fronting of //u// may have been common to both Irish and ScG. We have seen that unrounding in ScG occurs frequently in the environment t, d __ C[+palatal], C[+son] [+palatalised] [+tense]. Similarly, in certain Irish dialects (Connacht and Ulster), not only has //u// been fronted to /i/ in the environment t, d __ C[+palatal], C[+son] [+palatalised] [+tense], but the palatalisation of //t d// to /t' d'/ frequently also accompanies this fronting of //u//.

We conclude that the unrounding and fronting of //u// may be seen as a process of increasing or progressive palatalisation of the vowel //u// which has occurred most commonly when preceded by neutral segments and when followed by strongly palatal segments.

It was suggested that the change //t// > /t'/ / __ iC' (< //uC'//) in Irish may also be explained as a back formation based on lenited forms with initial /h/ based on the patterns /t/ ~ /h/, /t'/ ~ /h/. The fact that initial //t// is not palatalised in Irish *tuile*, and that //u// is retained in ScG in the word *tuile* may be explained in two ways: (a) the environment t __ l' is not a favourable environment for the 'palatalisation' of //u// or (b) the relative low occurrence of *tuile* in lenition environments — as opposed to verbs with initial /t/ and adverbs such as *a thuilleadh* — may have blocked the development in this case, if we accept that a preceding /h/ was an important factor in the unrounding of //u// in ScG and Irish. It may be significant that /h/ is the lenited form of /t/ and /s/, after which unrounding and fronting of //u// is common.

Minor:

There is evidence in Irish for the lowering of //u// to /o/ and /e/ especially before the segments /r l x/. Lowering of //u// is, however, quite rare in ScG dialects. Lowering to /o/ is attested before the segments /l x m/ in GL; lowering and unrounding to /ɤ/ is attested before /r b/. Lowering is also witnessed in ScG before original nasal labial fricatives //ṽ ṽ'// in ScG in the words *cumhacht* (GL), *umhail* (EPG), *cruimheag* (Skye). The Irish and ScG evidence implies that there is a tendency to lower //u// particularly before /r l x/ although this tendency is clearly more common in Irish than in ScG. The ScG evidence suggests also a tendency to lower //u// before nasal labial fricatives.

Lowering to /o/ and /e/ occurs both in Irish and ScG before the palatals /r' l'/ and is particularly common before svarabhakti /r'C'/ groups, e.g. *suirghe*. The lowering of //u// in *cruithneachd* may have been caused by the initial cluster /kr/.

The verbal noun *dul/dol* is realised in Irish and ScG dialects as /u/ and as /o/. Instances of /u/ and /o/ in the verbal noun *dul~dol* more likely represent reflexes of older variant forms *dul~dol* although instances of /o/ could well represent the lowering of //u// before /l/ in ScG dialects.

__ F[+voice] [+labial]

Following //u//, the development of the labial fricatives has differed in Irish and ScG dialects. In ScG all labial fricatives have been vocalised following //u// whereas in Irish word final //v// (e.g. *dubh*), word final (stressed) and intervocalic //ṽ'//, and //v'// have been retained in Irish dialects, to varying degrees. The vocalisation of //u// before //v ṽ// in both Irish and ScG has yielded /u:/ and /u(:)/ respectively: in ScG /u/ before intervocalic //v ṽ//, and /u:/ before preconsonantal //v ṽ//. Reflexes of //uv// and //uṽ// are differentiated in both languages by nasality, particularly in ScG dialects. Vocalisation of //v ṽ'// yields /i:/ in Irish dialects but mostly *i*-gliding diphthongs in ScG although /i(:)/ is attested in ESG.

__ F[+voice] [+dental]\[+velar]

/ɣ/ < //ð/ɣ// has not been retained in Irish or ScG dialects following original //u//. The vocalisation of /ɣ/ < //ð/ɣ// has resulted in /u:/ and /u(:)/ in Irish and ScG dialects respectively: in ScG /u/ is the normal reflex of //u// before prevocalic //ð/ɣ//, /u:/ before preconsonantal //ð/ɣ// e.g. *ughdar(as)*. Following //u// original /ɣ'/ < //ð'/ɣ'//

has been lost in all Irish dialects except in those dialects which retain disyllables of the type *buidhe* /bujə/. In ScG dialects on the other hand, a consonantal glide has been retained far more commonly. Before word final (stressed) //ð'/ɣ'//, /i/ is the normal reflex in Irish dialects of //u//. This occurs only margially in ScG, e.g. ESG; otherwise /uj/ or *i*-gliding diphthongs occur in ScG in this position. Vocalisation of //ð'/ɣ'// otherwise results in /i:/ in Irish, and /uj/, /ɯj/ and *i*-gliding diphthongs in ScG. The distribution of /uj/, /ui/ and /ɯj/, /ɯi/ reflects the distribution of /u/ and /ɯ/ before palatal segments generally in ScG, i.e. /u/ onsets occur following labial and velar segments, /ɯ/ onsets occur following /s d t/.

It is not clear if the Irish development //u// > /i:/ before the fricatives //ð' ɣ' (v' ṽ')// involved the intermediate stage of diphthongisation //u// > */ui/ as witnessed in some ScG dialects.

__ SON#\+C[+hom]

I have noted no examples of //u// occurring before original //R// although there are examples of //u// occurring before //rC[+voice]// in both Irish and ScG. In such cases, lengthening to /u:/ occurs in Munster and in most ScG dialects. However, short vowels are generally retained in Connacht, Donegal and south western ScG dialects (GK, GA). The retention of a short vowel in northern Irish dialects and south western ScG dialects before //r'C'// groups provides another important isogloss connecting both areas. Diphthongisation (and lengthening) occurs in southern Connacht dialects.

Lengthening, diphthongisation and retention are attested as reflexes of //u// before //N M (L)//[1] in both Irish and ScG dialects. Lengthening occurs in Munster and the majority of ScG dialects. Diphthongisation occurs in peripheral dialects such as IR and GL. Short vowels are retained in northern Irish dialects and in peripheral dialects such as GK, GA and EPG. South Connacht is mixed as both lengthening and diphthongisation occur here.

Before //L' N' M'// fronting and lengthening to /i:/ occurs in Munster dialects although diphthongisation occurs in IR. There is fluctuation between short /i/ and lengthened /i:/ in southern Connacht dialects. //u// is fronted and retained as a short /i/ vowel in other Connacht and Donegal dialects. In ScG diphthongisation to /ui/ or /əi/ is regular

[1]I have noted no examples of //u// before //L// in Irish dialects.

in most dialects although lengthening to /i:/ occurs in others, e.g. ESG. A short vowel is generally retained in GK, GA and EPG although instances of diphthongisation do occur especially before //M'//. A minor development which separates ScG from Irish is the development of //u// before *-n(n)s-* groups; in ScG the nasal consonant is regularly effaced before *s* in which case the preceding vowel //u// is lengthened or diphthongised. The result of this lengthening or diphthongisation is generally different to the normal development of //u// before //N'//.

Chapter 7

Section A
Development of //i// in Irish

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //i// has most frequently been retained in Irish dialects only before palatals other than fricatives and sonorants.

//i// > /i/, /u/ (/o/) / __ C

Before nonpalatals //i// may be retained or retracted to /u/, or in some cases /o/, although this occurs to varying degrees, depending on the dialect and lexeme involved. These developments are illustrated in the following table:

//i// > /i/, /u/ (/o/) / __ C

		IWM	IR	ICF	IT	IE	DD	TY
__r	bior	i	i	i	i~e	u~i	i	i
	smior	i	--	--	--	--	--	ir', or
__s	fios	i	i	i	i	i	(i)	i
	iosgad	i	i	--	--	i	--	i
	iostas	--	i	--	--	--	--	--
	scrios	--	i~u	--	--	--	i	i
	crios	--	i~u	i	--	--	i	i
	giosadán	--	--	--	--	i	--	--
	siostal	--	--	--	--	--	i	i[1]
__t	*giota	i	u	i	--	i	i	i
	ciotach	--	--	i (GCF)	i	--	i[2]	i
	*ciotal	i	i	--	--	--	--	--
__n	cion[3]	u	i~u	i	--	u[4]	i	--
	mion	--	i~u	i (GCF)	--	--	--	--
	smionagair	--	--	--	--	--	i	i
__N	sionnach	--	--	u	i	u	i	o[5]
	c(i)onnas	/konəs/	u	--	--	--	--	a
	mionna	--	--	--	--	u	i	i
	ionntódh	--	--	--	i	--	--	--
	ionnsaigh	--	--	u	i	i	o	--
	ionnmhas-	--	--	u	--	--	--	--
	ionnsaigh	--	--	u	i	i	o	--

[1] *siosarnach.*
[2] *ciotóg.*
[3] 'affection'
[4] But /i/ *ciontaidhe.*
[5] But /i/ *an tsionnaigh* (G).

		IWM	IR	ICF	IT	IE	DD	TY
	ionntódh	--	--	--	i	--	--	--
	ionnlaigh	--	--	--	--	u	--	--
	ionnraic	--	--	--	u	--	o	ð
__m	diombáigh	i (PRT)	--	--[6]	--	--	--	--
	diomol	i	--	--[7]	--	--	--	--
	diomdha	--	--	u	--	u	--	--
	ciomacha	--	--	--	u	--	i	--
	liom	u	u	u	u	u	i~o	o
	gliomach-	--	--	u	--	u	i	o
	tiomsadh	--	--	u[8]	u	--	i	i
#__m	iomad	u	--	--	--	--	o	--
	iomdha	/mo:/	/mu:/	u	u	u	o	o
	iomaire	u	--	u	u	u	o	o
	iomchar	u:	au	u	u	u	o	o
	iomlán	--	--	u	--	--	o	o
	iomarcaidh	u	/murkə/	u (GCF)	u	u	o	--
	iomramh	--	u	--	--	u	--	o
	iomrá	--	--	--	--	--	o	o
	iomarbháigh	--	--	--	--	--	o	--
__l	biolar	u	u	--	--	i[9]	i	--
	giolcach	u	u	--	--	--	i	--
	(f)iolar	u	u	--	u	u	o	i
	sciolpadh	--	--	u	--	--	--	--
__L	giolla	u	u	u	u	u	i	i
	biolla	--	--	--	--	i~u[10]	--	--
__p	driopás	--	--	--	--	i	--	
__b	scioból	ə (PRT)	ə (PRT)	--	u	i	i	i
	giobóg	--	--	--	--	--	i	i
	liobar	--	u[11]	u	--	--	i	o
	piobar	u	--	--	--	--	i	i
	gioblachán	u	--	u[12]	--	--	i[13]	i[14]
	siobarnach	--	--	--	u	--	i~o	--
	sciobadh	u	--	u	--	--	--	o
	scioból	ə (PRT)	ə (PRT)	--	u	i	i	i
	trioblóid	--	i	u	u	i	i	i[15]
	liobar	--	u[16]	u	--	--	i	o

[6]But cf. /u/ *diombailt*.
[7]But cf. /u/ *diomhdha*.
[8]*tiomsacht* (vn).
[9]*biorla*.
[10]'opening in bank of blown sand'. IE
[11]*liobarsach*.
[12]*giobalach*.
[13]*giobóg*.
[14]*giobóg*.
[15]But /o/ *trioblóideach*.
[16]*liobarsach*.

		IWM	IR	ICF	IT	IE	DD	TY
__k	sioc	u	u	u	u	u	i	i, o
	*pioc	u	u	u	--	u	i	i
	priocadh	u	--	--	--	--	--	i[17]
	siocair	--	--	--	u	--	i	u
	tiocfaidh	u	u	u	u	u	--	o
	piocóid	--	--	--	u	--	i	i
__x	riocht	u	u	o	--	o	i	o
	sliocht	--	u	--	--	o	--	o
__ŋ	ionga	u	--	u	--	u	i	a, o, əɯ
__θn	criothnaigh	--	--	--	--	u	--	--

Table 7A.1

Table 7A.1 may be analysed as follows:

	IWM	IR	ICF	IT	IE	DD	TY
Returns	31	30	32	26	34	45	44
/i/	8	10	7	8	13	33	24
/i/ %	25	33	22	31	38	73	55
/u/	20	21	25	18	23	14	20
/u/ %	63	68	76	67	66	30	45

Table 7A.2

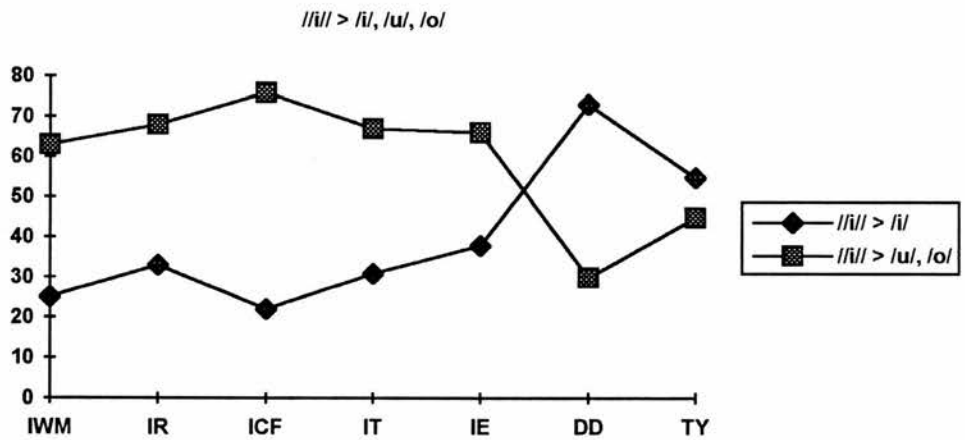

Chart 7A.2

A clear pattern emerges. Retraction of //i// before nonpalatals occurs more commonly than the retention of //i// in Munster and Connacht dialects whereas //i// is retained more commonly in Donegal dialects. This fundamental difference between Munster and Connacht, and Donegal dialects is indicated clearly by the crosssing over of graph lines in chart 7A.2.

---

[17]*priocaire*.

The developments //i// > /i/ and //i// > /u/, /o/ may be analysed according to the phonological environments in which each occurs as follows (only environments for which more than word is attested in table 7A.1 are included here):

	_r	_s	_t	_n	_N	_m	_l	_L	_b	_k	_x	Average
Returns	r	22	12	9	26	56	14	8	36	27	9	
/i/	9	22	11	7	10	7	4	3	19	8	1	
/i/ %	100	100	92	78	38	13	29	38	53	30	11	53
/u o/	2	2	1	4	15	50	10	6	18	20	8	
/u o/%	22	9	8	44	58	89	71	75	50	74	89	54

Table 7A.3

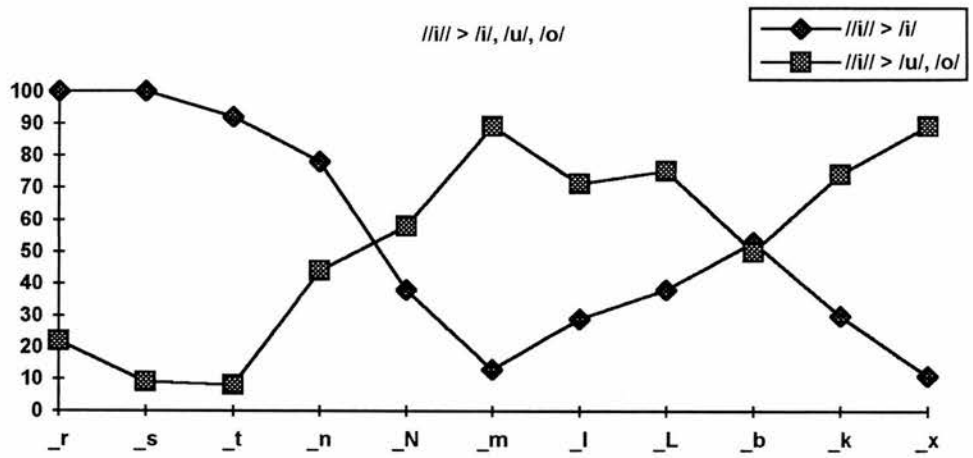

Chart 7A.2

This provides the following ordering for the optimal environments for each of the developments //i// > /i/ and //i// > /u/, /o/ (with those environments exhibiting a score of less than the average percentage score for each development placed between round brackets):

//i// >> /i/ / __ r = s >> t >> n >> b (>> L = N >> k >> l >> m >> x)

//i// >> /u/, /o/ __ m = x >> L >> k >> l >> N (>> b >> n >> r >> s >> t)

We note that //i// is always fronted to /u/ in absolute initial position before /m/. //i// has been retained before nonpalatals in Irish when //i// precedes the relatively neutral segments /r s t/ and /n b/. Similarly, //i// has been retracted most commonly before the labial /m/, the velars /k x/, and velarised /L l N/ in Irish dialects. This suggests that the retraction and rounding of //i// to /u/ originated before /m/, velar and velarised segments in Irish dialects. It is significant that retraction and rounding to /u/ occurs more commonly before /s t n/ in Munster dialects than in other Irish dialects where

//i// is usually retained, e.g. *scrios, crios* /i~u/ (IR), *giota* /u/ (IR), *cion* /u/ (IWM, IR), *mion* /i~u/ (IR). This may be partially explained by the fact that these segments /s t n/ are velarised in Munster dialects unlike most other dialects (see chapter 1). This suggests that the change //i// > /u/ originated before labials, velars and velarised sonorants, and then spread to other velarised segments.

Minor

Original //i// has been retracted before originally palatalised //R'// in some Irish dialects in the word *giorra* < *girre* (comparative-superlative form of *gearr* 'short'). Ó Murchú (1986) argues that the change //R'// > /R/ is an old one and precedes the breaking of //e:// to /ia/ in Munster dialects. Realisations of *giorra* in Irish dialects are as follows:

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
giorra	/g'irə/	/g'irə/~ /g'urə/	/g'ir'ə/ (sic)	/g'urə/	/g'urə/	/g'irə/	/g'iRə/

Table 7A.4

We have noted above that the change //i// > /u/ is not generally attested in Irish dialects before //r//.[18] We tentatively suggest the following ordering of developments: (A) for those dialects which have /u/ realisations in *giorra*, (B) for those dialects which retain //i//:

(A)	(B)
1. //R'// > /R/	1. //R'// > /R/
2. //i// > /u/	2. /R/ > /r/
3. /R/ > /r/	3. //i// > /u/

The ICF form /g'ir'ə/ is an exception to the rule /R'/ > /R/. The palatal /r'/ can be explained as having arisen by analogy based on the morphophonemic pattern aC~iC' as witnessed for example in *geal~gile*.

//i// > /u/ R' __

Original //i// has been retracted to /u/ following initial original //R'// before an original palatal //θ'// in some dialects in the verb *rith*. The development in this case does not pattern with the normal development of //i// in the environment / R' __ C' which is /i/, e.g. *ribe*. In fact the development of /u/ in *rith* is more in line with the development of //i// in the environment / R' __ C which is normally /u/. The following table illustrates the development of //i// following R':

[18]The only exception which I have noted is *bior* /i/~/u/ IE.

	IWM	IR	ICF	IT	IE	DD	TY
rith	i	u[19]	u	i	i~a[20]	ɯ	i~ɯ
ribe	i	--	--	--	i	i	--
righin	i:	i:	ai	əi, i:	əi	i:	i:
riocht	--	u	o	--	o	i	o
rionnach	--	--	u[21]	--	u	--	--

Table 7A.5[22]

Table 7A.5 suggests that the development //i// > /u/ following //R'// occurred only in the environment / R' __ C,[23] if we accept that the development //i// > /u/ in *rith* occurred only once //θ'// had been reduced to /h/. If so, then it is possible to set out the following chronological orderings:

(A1) //θ'// → /h/ (B1) //R'// → /R/
(A2) //i// → /u/ (B2) //i// → /u/

Note that is is impossible at the present stae of knowledge to provide an ordering for the developments //θ'// > /h/ and //R'// > /R/.

It is not clear to what extent the development of the verb *rith* has been affected by the verb *righ*.[24]

Lowering of //i//

//i// > /e/

Lowering of //i// to /e/ occurs in a small number of words most commonly before the sonorants /r'/ and /r/ although it is also attested before /l'/ and /L'/ and before the group /f'r'/ as the following table illustrates:

---

[19]/rux/ *rioth* < *rith*.
[20]*rith* /i/ 'run'; /a/ 'chase'.
[21]GCF.
[22]I have not included *rinn(e)* (PAST) in this table since this form is unlikely to have ever been realised with initial /R/.
[23]Note that it is impossible at the present state of knowledge to provide an ordering for the developments //R'// > /R/, //θ'// > /h/.
[24]Brian Ó Curnáin has suggested to me that the distinction in Carna (Conn) between *righ* (vb) /ri:/ and *rith* (vb) /ri/, /rix'/, /ru/ may to some extent be due to a need to differentiate between both verbs. Both verbs have the same verbal adjective /rit'ə/, see GCF (*passim*).

	IWM	IR	ICF	IT	IE	DD	TY
__C'							
tirim	i[25]	e	e	e	i	--[26]	i
iris	--	--	e	--	--	i	i
ifreann	i	i	e	i	i	i	i
sileadh	i	--	i	i	e	i	o[27]
trillse	--	--	--	e[28]	e	i[29]	--
ithir	--	--	i:	i	e	--	--
__C							
bior	i	i~u	i	e~i	i~u	i	e[30]
spiorad	i[31]	i[32]	i[33]	--	e	i	--
giorta	--	--	--	--	--	e	o[34]

Table 7A.6

Lowering in the vacinity of *r*-sounds in some Connacht dialects has been alluded to by Hickey (1986). English (or French?) /i/ appears to have been borrowed as /e/ in some instances in some Connacht dialects unless such instances reflect a lowering of native /i/ also. Examples include **filipe*, **filibín*, **bib* ICF; **feidil*, **peiliúr*, **peictiúr*, **feilibín* IE. It has not been hitherto noticed that this set of loan words all contain initial labials which may have been a significant factor for lowering. We may also note a tendency to lower //i// to /e/ in the vacinity of palatalised labials in Connacht dialects particularly in words containing an *r* sound, e.g. *ifreann, bior, spiorad.* The change //i// > /e/ in the environment C' __ C' can be viewed as one of dissimilation between the front (palatal) vowel and palatal consonantal environment.

//i// > /a/ / __ C (C')

Lowering of //i// to /a/ occurs in a small number of words, and is particularly common in Connacht dialects as the following table indicates:

---

[25]*tirim* > *trim.*
[26]But /i/ *triomadh.*
[27]Phonetically [ə].
[28]*trillseán.*
[29]*trilseán* (sic).
[30]Unstressed, in phrase *bior oighreoige*. But cf. /i/ *biorán.*
[31]*spiorad* > *sprid.*
[32]*spiorad* > *sprid.*
[33]*spiorad* > *sprid.*
[34]*giortach* 'short'.

//i// > /a/ / __ C (C')

	IWM	IR	ICF	IT	IE	DD	TY
iothla(nn)	i[35]	**a**	o	--	--	--	--
ionann	--	--	**a**	**a**	**a**	**a**	**a**
ionnta	--	u~o[36]	u~i:[37]	**a**	**a**~i~u[38]	--	o
fionnán	--	--	--			**a**	--
innseacht	i:[39]	ai[40]	i:	--	**a**	i[41]	i
rith	i	u[42]	u	i	i~**a**[43]	ɯ	i~ɯ

Table 7A.7

IR /a/ *iothlann* may be discounted since //i// is unlikely to have been lowered before the cluster //θl// or its later reflexes. The IR form most likely derives from **eathlann*, based on the oblique form *eatha* of *ith* 'corn', see DIL s.v. *ith*. The change //i// > /a/ therefore occurs only (a) before the nasals //n N// but also //N'// and (b) in Connacht and Donegal dialects. It is particularly common in word initial position. Lowering to /a/ in forms of the prepositional pronouns of the preposition *i* 'in' may be due to levelling with the third person singular form *ann* /aN/. It is significant that the lowering of //i// to /a/ only occurs in dialects where lengthening and diphthongisation do not normally occur before originally tense sonorants, including //N//. We discuss the implications of this when we compare Irish and ScG developments.

//i// > /o/ / __ C

Lowering and retraction of original //i// to /o/ occurs in a small number of words in some Galway and Mayo dialects as the following table illustrates:

	IWM	IR	ICF	IT	IE	DD	TY
iothlann	i[44]	a	**o**	--	--	--	--
riocht	--	u	**o**	--	**o**	i	o
sliocht	--	u	--	--	**o**	--	o
iorghail	--	--	--	**o**	--	--	--
Iorras	--	--	--	--	**o**	--	--

Table 7A.8

---

[35]One speaker has *iothla* /i 'he:lə/, IWM: 106, n. 2.
[36]/u~o/ *ionnam* and also /i/ *inneam* < *ionnam*. Note also /(ə) 'num/, IR: §371.
[37]*ionn(t)am*.
[38]Cf. /a/ *innte* 'in her'.
[39]*innsint*.
[40]*innsint*.
[41]*innse*.
[42]/rux/ *rioth* < *rith*.
[43]*rith* /i/ 'run'; /a/ 'chase'.
[44]One speaker has *iothla* /i 'he:lə/, IWM: 106, n. 2.

The lowering of //i// to /o/ is clearly common before the segments /x/ and /r/. Given that //u// is lowered to /o/ frequently in Connacht before /r x/ (and also /l/, see chapter 6, section A), it could be argued that //i// was retracted to /u/ and subsequently lowered to /o/. We may also compare the development of Old Irish /iu/ before /x/ in the words *fliuch, fiuch* which are frequently realised as /o/ in these dialects (see appendix 8):

	IWM	IR	ICF	IT	IE	DD	TY
fliuch	u	u	o	o	o	i~ɔ~o~u	u[45]
fiuchadh	(u)	u	o	o	--	i	--

Table 7A.9

__ F[+voice] [+labial]

The major developments of //i// before labial fricatives is summarised in the following table:

	IWM	IR	ICF	IT	IE	DD	TY
iv iv'/ṽ'	u: iv'#,i:V,C	u: iv'#, aiC	u: ib', iv'	u: iv'	u: iv'	u: iv'	u: iv'

Table 7A.10

Instances of //i// before //v// are scarce, the only examples noted being *siubhal, iubhar, tiobhraidh, Siobhán*. I have not noted any instances of //i// before //ṽ//.[46] The available examples, however, imply that the vocalisation of //v// has led to the development of a long high back monophthong /u:/. This development may be explained in two ways: (a) //i// was retracted and rounded to /u/ before the vocalisation of //v//, or (b) the vocalisation of //v// led to de-vocalisation of //i// and the vocalisation of the glide /w/ < //v//. The reduction of disyllables of the shape //(C')ivə(C)// to monosyllables would have led to the lengthening of /u/ to /u:/ in either scenario. In syllables of the shape /(C')ivC// the vocalisation of //v// yielded a long vowel /u:/. Both developments may be summarised as follows:

(a) //(C')ivə(C)// > /(C')uvə(C)// > /(C')uwə(C)/ > /(C')u:(C)/
//(C')ivC// > /(C')uvC/ > /(C')uwC/ > /(C')u:C/

---

[45]/u/ *fliuch* (adj) but /o/ (vb).

[46]Mac an Fhailigh (IE) lists *liomhán* 'basking shark' but this derivation is not certain, see Ó Baoill (1994: 173-5).

(b) //(C')ivə(C)// > /(C')iwə(C)/ > /(C')u-ə(C)/ > /(C')u:(C)/
//(C')ivC// > /(C')iwC/ > /(C')u:C/

Early Modern Irish *iu*-spellings for original *ibh* sequences are compatible with both explanations offered above. Given that //iC// sequences are rarely, if ever, spelled with *iu* in the Middle or Early Modern periods except when C = //v//, it is reasonable to assume that *iubh* spellings may have represented underlying /uw/ or /u(:)/ realisations. See for example DIL s.v. *sibal*. It is also possible that the vocalisation of //v// may have resulted in the development if a *u*-gliding diphthong */iu/, thus merging with original //iu// as in *fliuch, tiugh*. On the development of *u*-gliding diphthongs with /i/ onsets in Gaelic generally, see appendix 8. Whatever the intermediate developments of //iv// sequences may have been, the vocalisation of //v// would have resulted in lengthening to /u:/ preconsonantally but also prevocalically with the monophthongisation of //uvə// sequences.

The only instance which I have noted of //i// before //v'// is the pronoun *sibh(se)* which is usually realised as /ʃiv'/.[47] I have found no instances of the development of //i// before //ṽ'// except *nimhe*, the reflexes of which derive from original //e// via /i/. The labial fricative //ṽ'// has been retained in all dialects except in Munster dialects where it has been vocalised, resulting in /i:/.

__ F[+voice] [+dental]\[+velar]

The development of //i// before dental and velar fricatives in summarised in table 7A.11:

	IWM	IR	ICF	IT	IE	DD	TY
ið/ɣ	i:C	--	i:V	i:C	--	ig#, iɣV, i:C	i:C, oɣ
ið'/ɣ'	i:V	i:C	i:V	i:V	i:V	i:V	i:V
ið'/ɣ'#	--	--	i	i	--	--	i:#

Table 7A.11

Instances of //i// before //ð// and //ɣ// are not numerous in our sources, the only examples noted being *fliodh/gh, fioghair, iodhbairt, biodhbhaidhe, biodhgamhail* and *tiodhlacadh*. A search of FGB using Gléacht shows that there are approximately 10 words containing stessed *-iodh-* (not counting derivatives of *fiodh*): these are *iodh,*

[47]Note, however, strengthening of //v'// to /b'/ in /ʃib'/ ICF. However, this form may have originated in sandhi forms such as *sibh fëin* /ʃi'pe:n'/.

iodha, iodhlann, iodhlann, fiodh, miodh, miodhlach, fioghual, fliodh, sniodh, words which are not generally attested in our monograph sources. The low return for words containing *-iodh-* is partly due to the fact that *iodhC* sequences have generally been changed to *io* in standard Modern Irish orthography, see *An Caighdeán Oifigiúil* (1958/79: 104-5). Such instances are, however, not numerous, and include *biodhg* > *bíog, iodhan* > *íon, iodhbairt* > *íobairt, tiodhlacadh* > *tíolacadh*. The standard Modern Irish forms in addition to the forms afforded by the monographs imply that the regular development of //i// before //ð/ɣ// has been /i:/ with compensatory lengthening of //i// following the vocalisation of the fricative(s).[48] The development of //i// in *tiodhlacadh* to /əi/ in IWM is exceptional and may be due to analogy with *adhlacadh* as Ó Cuív suggests (IWM: 111). The general development of /i:/ in such cases implies that //i// had not been retracted and rounded to /u/ prior to the vocalisation of //ð/ɣ//; for if it had, we would expect /u:/ rather than /i:/ in *iodhbairt, tiodhlacadh* etc.

The development of /i:/ rather than an expected /u:/ is curious since we might expect the vocalisation of /ɣ/ < //ð/ɣ//, following //i//, to have yielded /u:/ whether or not //i// had been retracted to /u/ before the vocalisation of /ɣ/. There are various possible explantions for the development of /i:/ in such instances: (a) a /uɥ/ or /u/-like glide may have developed in some instances but may have been subsequently interpreted as an on-glide to a following (nonpalatal) consonant, e.g. [tiuɥLək'] = /ti:Lək'/ *tiodhlaic* (vb); (b) the development of a /uɥ/-like glide may have resulted in merger with the original central-gliding diphthong *ia, cf.* /iə/ DD *tiodhlacadh*; (c) //ð/ɣ// may have been vocalised without leaving a velar-gliding vowel in its wake as frequently has occurred in ScG, e.g. *odhar* /o-ər/ — this development would regularly have resulted in /i:/ by compensatory lengthening and with monophthongisation of disyllabic sequences; (d) following rule 3A (chapter 3), the velar approximant /uɥ/ (< //ð/ɣ//) would have been fronted to /j/ following //i//. In chapter 3, we suggested the following rules for the development of epenthesis in //ðC//, //ɣC// clusters:

//að/ɣ// → //að/ɣə// / __ C, C = /g b v m l r n?/ Munster
Rule 3A.4

//að/ɣ// → //að/ɣə// / __ C, C = /g b/ Connacht, Donegal
Rule 3A.5

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[48] //i// is retained when //ð/ɣ// occurs in word final position, e.g. *fliodh/gh* DD.

Based on these rules, the development of //ið/ɣ// sequences may be described as follows:

	//ið/ɣ// →	//ið/ɣə// / __ C,	C = /g b v m l r n?/	Mun
	//ið/ɣ// →	//ið/ɣə// / __ C,	C = /g b/	Con, Don
1	//ið/ɣ// →	/ijə/ > /i:/ / __ ə		Mun, Con, Don
2a	//ið/ɣ// →	/i:/ / __ C	C ≠ /g b v m l r n?/	Mun
2b	//ið/ɣ// →	/i:/ / __ C	C ≠ /g b/	Con, Don

This accounts for the /i:/ *iodhbairt, biodhg* and instances of /i:/ for //ið/ɣə// sequences in all Irish dialects, and /i:/ *fioghair* (ICF), /i:/ *biodhbhaidhe* (DD), /i:/, /iə/ *tiodhlacadh* (DD) etc. Lengthening before //ð/ɣC// clusters may be compared to lengthening of //a// in cases like Connacht *adhlacadh* etc. Lengthening before the cluster //ðl// in *tiodhlacadh* may have developed early as a result of the reduction of the cluster to /L/ while //ð// was realised as a dental fricative.

Although *iodh* has generally resulted in /i:/ in Irish dialects and though there are relatively few examples to illustrate its development satisfactorily in the monographs, we have argued that the end result (/i:/) may have been reached via a number of different routes.

The development of //i// before //ð'/ɣ'// is regularly /i/ when the fricative occurred in word final position (e.g. *nigh*) or in some cases when it occurred before a morpheme boundary, followed by a voiceless consonantal onset (e.g. /i/ *dlightheach* IWM). Otherwise //i// has been lengthened to /i:/ before original //ð'/ɣ'// in all Irish dialects. The words *tighearna* 'lord' and *inghean* 'daughter' (/iə/ in IWM, DD) are the only notable exceptions to this development. *Tighearna* is generally realised with the diphthong /iə/ in all Irish dialects. Some have suggested the possible influence of *iarla* /iə/, although as we shall see this is unnecessary.[49] The occurrence of /iə/ in *tighearna*, as in *inghean,* may as Breatnach points out, be 'another illustration of the difficulty of distinguishing between /i:/ and /iə/ before most non-palatals', IR: §490, p. 132. Moreover, the development of //i:// > /iə/ before nonpalatal consonants is surely of

[49]IWM:111; IR: 132.

relevance here, e.g. /iə/ *fíor* IR, ICF, DD.[50] *Tighearna* and *inghean* /iə/ may represent an alternative development of //iɣ'ə// whereby the reduction of the fricative and the subsequent coalescence of syllables resulted in /iə/ rather than /i:/. It may therefore reflect a stage when the fricative had been reduced but when preceding and following syllables had not yet coalesced, i.e. disyllabic /i-ə/.[51]

Original //i// is diphthongised before //ɣ'// when preceded by original //R'// in the word *righin* in some Galway and Mayo dialects as the following table illustrates.

	IWM	**IR**	**ICF**	**IT**	**IE**	**DD**	**TY**
righin	i:[52]	i:[53]	ai	i:~əi	əi	i:	i:

Table 7A.12

It could also be argued that //i// was retracted to /u/ in the word *righin* before the reduction of the fricative as it is possible to derive all modern Irish realisations from a form /Ruɣ'in'/ (< //R'iɣ'in'//) as follows:

/Ruɣ'in'/ > /Rujin'/ > /Ri:n'/ > /ri:n'/
/Ruɣ'in'/ > /Rujin'/ > /Ruin'/ > /Rəin'/ > /rəin'/

The retraction of //i// to /u/ is not necessary in order to explain the development of /əi/ diphthongs in Irish dialects in the word *righin*. Initial /R/ (< //R'//) may have had the effect of lowering original //i// to [I] or perhaps to a mid vowel which would regularly have given rise to /əi/ following the vocalisation of the intervocalic fricative and subsequent monophthongisation of //iɣ'ə// syllables. Alternatively, the onset /ə/ (/a/ ICF) may originally have been an off-glide following the velarised /R/.

__ SON#\+C[+hom]

I have noted no examples of //i// before //R// or //L// in the Irish monographs. In IWM lengthening to /u:/ is common before //N M ŋ//; in IR diphthongisation to /au/ occurs before //N M// but lengthening to /u:/ before //ŋ// (in *iongantas, iongnadh*). In southern Connacht dialects lenghtening to /u:/ occurs before //M// although /u/ also

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[50]'/i:/ and /iə/ commonly interchange before a non-palatal'. (IR: §90). 'Overlapping of the two phonemes [/i:/ and /iə/ RÓM] tends to occur' before nonpalatals, IT: §78. Cf. IE: §91 where it is stated that /i:/ and /iə/ are 'under-differentiated' before non-palatals. Cf also DD: §164 where it is stated that 'O.Ir. accented í before a non-palatal consonant . . . developed into the diphthong /iə/'.
[51]Cf. realisations of //iɣ'ə// in ScG.
[52]In phrase *an-righin*.
[53]In phrase *an-righin*.

occurs; in these dialects, before //N//, lengthening to /i:/ and /u:/ both occur although short /i/ and /u/ also occur. Neither lengthening nor diphthongisation occurs in other Connacht or Donegal dialects where /u/ appears to be the norm before //M// (although /i/ also occurs in IE). Variation between /i/ and /u/ occurs before //N// in IT and IE. In Donegal /i/ appears to be the norm before //N//. Lengthening to /i:/ is common in Connacht dialects before //ŋ// whereas /ɯ:/ and /ʏ:/ occur in Donegal.

This evidence would appear to imply that //i// was retracted to /u/ before the segments //N M ŋ// in Munster dialects before compensatory lengthening of the vowel.[54] This is suggested both by the /u:/ and /au/ realisations for original //i// before //N M//. Long /u:/ presupposes that //i/ has been retracted to /u/ prior to the lengthening of short vowels before the tense sonorants.[55] Similarly /au/ in IR can only have derived from the diphthongisation of a lax [U] (i.e. a retracted //i//), the stages being: [U] > [Uu] > [au].

The evidence from Connacht and Donegal dialects implies that //i// was retracted to /u/ regularly before //M// and only sporadically before //N//, and rarely before //ŋ//.[56] This accords with the conclusions reached above with regard to the retraction of //i// to /u/ before *m*.

The prepositional pronoun *liom* is realised as /u/ in IWM although /u:/ 'is sometimes heard in verse'.[57] Cf. discussion of the pronoun *sinn* and the prepositional pronoun *linn* below.

Original //i// is retained in northern Connacht and Donegal dialects before //L' N' M'//. Lengthening to /i:/ is common in Munster and southern Connacht dialects although there is variation between /i/ and /i:/ before //N' M'// in some southern Connacht dialects, e.g. ICF. However, diphthongisation (to /əi/ before //L'//, /ai/ before //N' M'//) occurs in IR. The diphthongisation in IR may be due to the diphthongisation of a lax [I] as opposed to a tense [i], which would have given rise to the following development:

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[54]Note that //u// and //i// have developed along parallel lines before the segments //N M ŋ// in Munster dialects.
[55]Unless /u:/ derives from an intermediate */iu/ diphthong.
[56]But note /u/ *iong(n)a* ICF.
[57]IWM: §402.

[I] > [Ii] >	[əi]	__ L'
	[ai]	__ N', M'

In IR, the onset of *i*-gliding diphthongs arising as the result of compensatory lengthening before tense sonorants is different in nasal and non-nasal environments: /əi/ before //L'// but /ai/ //N' M'//.

The pronoun *sinn* and the prepositional pronoun *linn* are realised as /i/ in some Munster and southern Connacht dialects. The absence of lengthening in pronominal forms like these may be due to their frequent occurrence in unstressed positions.[58] A similar phenomenon has been noted for other languages where phonologically weak words, frequently but not always 'grammatical functors', do not undergo an expected regular sound change, see Labov (1994: 507) for details.

[58]/i:/ occurs in *sinn* and *linn* in modern amhrán metres from the seventeenth century onwards. For an example, see *sinn* /i:/, de Brún *et al* (1986: §10, p. 12 verse 2, line 6).

Section B
Development of //i// in ScG

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //i// has been retained most consistently in ScG dialects only before palatals other than fricatives and long sonorants.

//i// > /i/, /u/ __ C

Before nonpalatals original //i// is retained, and retracted and rounded to /u/ (or simply rounded to /y/ in south west Argyllshire dialects), to varying degrees. Retraction and rounding to /u/ is most common before the sonorants //N M// except in south west Argyllshire dialects where /i/ and /y/ occur. The following table illustrates the various developments of //i// before nonpalatals in ScG dialects.

	GL	DOH	S	R	GK	GA	ESG	EPG
__ l, L								
iolaire	**u**	i	i (Sl) **iu** (Km)	--	--	y~i	--	**u**
iothlainn	**u**	i	i (Sl) **iu** (Km)	--	--	**u**~y~i	--	--
biolar	--	--	--	--	i~y	--	--	--
giollan	--	--	--	--	--	--	--	**u**
__ m								
iomaire	--	--	--	--	--	i	i	i
iomadh	--	i	**u**	i	i	i	i	--
iomad	**u**	--	--	--	i[1]	--	--	i
iomramh	i	i	--	i[2]	--	i	i[3]	--
iomradh	i	i	--	--	--	i	--	--
iomallan	i	--	--	--	--	--	--	--
iomlaid	--	--	--	--	--	--	o[4]	--
tiomall[5]	--	--	--	--	ɵ--	**u**	--	--
giomach	ĩ	i (Ba), **u** (Ha)	**u**	i	--	i	i	--
tiomnadh	ɯ	--	--	--	i	i~y	--	--
ciomag	--	--	--	--	--	--	ɤ	--
__ N								
*ionnad	**u**	a~**u**	**u**	**u**	a	a	**ũ**	a
ionnairidh	--	**u**	--	--	--	--	--	--
sionnach	**ũ**	--	--	--	**u**	--	--	--
fionn	--	--	--	--	i~y	--	--	--
fionnar	**ũ**	--	--	--	--	--	--	--

[1] *iomadach.*
[2] /[ir'i:]mək/ *irmeadh* < *iomradh.*
[3] *iomair.*
[4] *iomlaid* > *iolamaid.*
[5] *tiomall* < *timcheall/tiomchall.*

	GL	DOH	S	R	GK	GA	ESG	EPG
fionnadh	--	--	--	--	i~y	i~y	--	a, ɔ
Fionnladh	--	--	--	--	i~y	i~y	--	--
Fionnghail	--	--	--	--	--	i~y	--	--
cionnas	--	**u**	--	**u**	--	--	--	--
tionndadh	ɔ̃ũ	**u:**(Ba),**Uu**(Ha)	u:	u:	--	i	**ãu:**(B,G), **ũ:**(E)	a
__n[6]								
mionach[7]	i	--	--	i	--	--	--	--
tional	--	--	--	i	--	--	--	ɛ
ciontach	ɔ	--	--	--	--	i	--	--
__R								
siorrachd	**u**	--	--	--	--	--	--	--
siorram	**u**	--	--	--	(i?~)y	--	--	--
giorra	i	i	i	i	i~y	--	--	--
__r								
bior(ach)	i	i	i	--	i~y	i	--	i
bioran	i	i	--	--	--	--	--	i
spiorad	i	--	--	i	--	--	--	i
smior	i	--	--	--	--	--	ɛ	ɛ
tioram, tiormachadh	(ir'), ɯr[8]	--	--	(ir')	(ir)	--	(ir)	(ɯr, ir)
__s								
fios	i	i	--	--	i	i	i	i
crios	i	i	--	--	--	--	ɤ[9]	i
crioslach	--	--	--	--	--	--	ɤ	--
iosgaid	--	--	--	--	--	--	ɛ~ɤ	--
__b								
sgiobadh	i	--	--	--	--	--	i[10]	--
sgioblaich	i[11]	--	--	--	--	--	--	i
p/briob	--	--	--	--	--	--	--	i[12]
__g								
briogadh	i	--	--	--	--	--	--	--
briogais	i	--	--	--	--	--	--	i

[6]The word *ionann* has not been utilised in this table since a consideration of the its various reflexes in modern ScG dialects shows that its development has not been regular:

	DOH	GK	GA	ESG
ionann	/iNəN/ (Ba) /uNəN/ (Ha)	/iNən/ /yNən/ /uNan/ /ynən/	/(n')i-əN/ /(n')y-əN/	/ũ:n/

Clearly in the case of the DOH and GK forms assimilation has taken place between //n// and //N// to produce //n// > /N/. It is possible that this may also have occurred in GA and EPG before the loss, through dissimilation, of the nasal segments. Many of the modern reflexes of *ionann* therefore derive from an intermediate stage *ionnan(n)*, with //n// > /N/.

[7]*mionach* < *meanach*, i.e. contains original //e//.

[8]*tirim* /ir'/; *tiormachadh* /ɯr/.

[9]*crioslach* /krɤs(ə)Lax/

[10]*sgiobar* 'skipper'.

[11]*sgiobalta*.

[12]*briob* 'wink'.

	GL	DOH	S	R	GK	GA	ESG	EPG
__ ŋ								
iongna	ĩ:n	i:N[13]	i:n	i:n	--	i~y	ɤ̃:, ũ:[14]	i:n
iongantach	ĩ-u	i(Ba), jɯ:, ĩɣ (Ha)	iŋ	ĩŋ, iaN[15]	--	y, ø	--	ja, iə
__ d								
biodag	i	--	--	--	--	--	--	--
__ k								
gliocas	--	--	--	--	--	--	--	ɤ
__ x								
sliochd	--	--	--	--	i~y	--	--	i
__ ð, ɣ								
fiodh	i	i	i	i	i(~y?)	i	u	u~ɯ

Table 7B.1

This table can be analysed as follows:

	GL	DOH	S	R	GK	GA	ESG	EPG
Returns	32	18	11	13	15	20	15	22
/i/	20	14	7	10	12	17	6	12
/i/ %	63	78	64	77	80	85	40	55
/u/, /ɯ/	11	4 (6)[16]	6	3	1	2	4	3
/u/,/ɯ/%	34	22 (33)	55	23	7	10	27	14
/y/	--	--	--	--	8	7	--	--
/y/ %	--	--	--	--	53	35	--	--

Table 7B.2

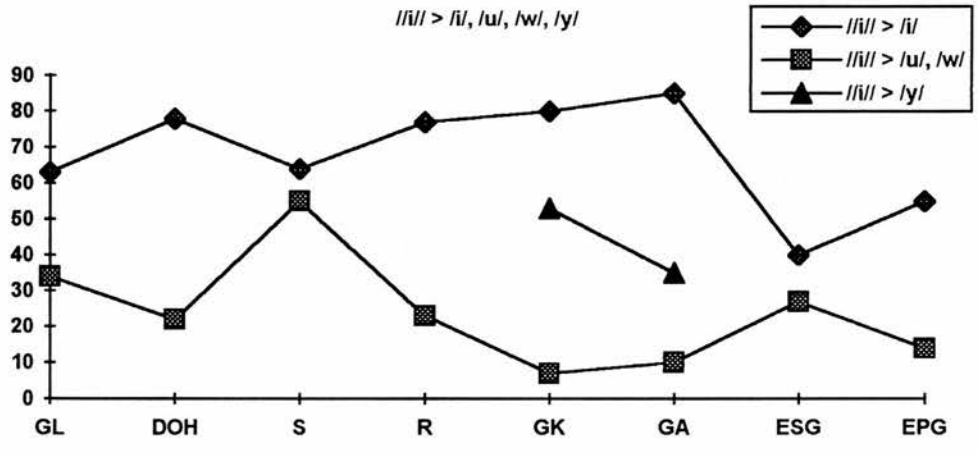

Chart 7B.1[17]

[13]Ba; but /i:n/ Ha.
[14]/ɤ̃:/ B,G; /ũ/ E.
[15]See SR: 145.
[16]Numers in bracktes refer to Ha.
[17]/w/ used in chart for /ɯ/.

It follows from this analysis that //i// is retained before nonpalatals significantly more often than it is retracted and/or rounded in all ScG dialects. Only in Skye and ESG are the percentages for the retention and retraction of //i// similar. Retraction to /u/ is most common in some Skye dialects.[18] In GK and GA retention of //i// is more common than rounding to /y/ which is in turn more common than retraction to /u/. We conclude that the retraction of //i// to /u/ is not a firmly established sound change in the majority of ScG dialects.

We may analyse the various developments of //i// in the prepalatal position according to the following consonantal environment as follows (only including those environments for which more than word is attested in table 7B.1 above):

	_l, L	**_m**	**_N**	**_n**	**_R**	**_r**	**_s**	**_b**	**_g**	**_ŋ**	**Ave rage**
Returns	11	32	28	4	8	16	12	5	3	13	
/i/	7	26	7	3	5	13	9	5	3	10	
/i/ %	64	81	25	75	63	81	75	100	100	77	74
/u ɯ/	6	6	16	0	2	1	0	0	0	2	
/u ɯ/%	55	19	57	0	25	6	0	0	0	15	18
/y/	3	1	6	0	2	1	0	0	0	2	
/y/ %	27	3	21	0	25	6	0	0	0	15	10

Table 7B.3

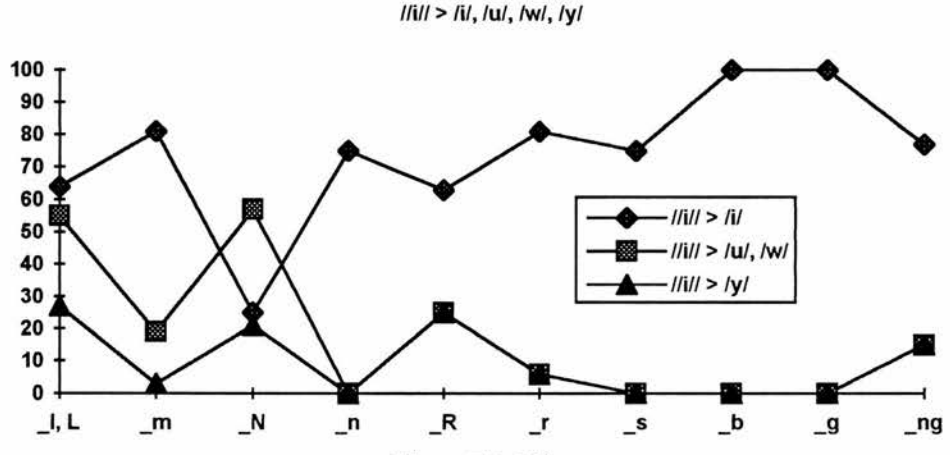

Chart 7B.2[19]

[18]The highest percentages for the retraction of //i// > /u/ occur in the Skye dialect of Kilmuir, and next in the Lewis dialect of Leurbost. It may be significant that the Kilmuir dialect shares other linguistic features with Lewis dialects, for instance the type of consonantal nasalisation, see SR: §8.

[19]/w/ used in chart for /ɯ/.

It follows that in ScG dialects //i// is retained more frequently than it is retracted and/or rounded before all consonantal segments except before //N// in which case retraction and rounding to /u/ is more common. Before //l L// the percentages for the retention and retraction of //i// are close, although //i// is more commonly retained than it is retracted before these segments. Table 7B.3 and chart 7B.2 provide us with the following hierarchical ordering for the retraction and/or rounding of //i// before nonpalatals (brackets surrounding particular environments indicate that the percentage score for that environment is less than the average percentage score for the relevant development):

//i// > /i/ / __ b = g >> m = r >> ŋ >> s = n (>> l, L >> R >> N)

//i// > /u/, /ɯ/ / __ N >> l, L >> R >> m (>> ŋ >> r >> n = s = b = g)

//i// > /y/ / __ l, L >> R >> N >> ŋ (>> r >> m >> n = s = b = g)

Since //i// > /y/ is only attested for GK and GA, the last statement is somewhat misleading. A more accurate statement of the frequency of /y/ for //i// (in GK, GA) may be arrived at as follows:[20]

	_l, L	**_m**	**_N**	**_n**	**_R**	**_r**	**_s**	**_b**	**_g**	**_ŋ**	**Ave rage**
Returns	3	10	10	1	3	2	2	0	0	2	
/y/	3	1	6	0	2	1	0	0	0	2	
/y/ %	100	10	60	0	67	50	0	0	0	100	45

Table 7B.4

//i// > /y/ / __ l, L = ŋ >> R >> N >> r (>> m >> n = s = b = g) (GK, GA)

It follows that //i// has been retained most frequently in ScG dialects before the labials /b m/, the velars /g ŋ/ and the neutral segments /r n s/. On the other hand //i// has been retracted and rounded to /u/ most frequently before the velarised segments /N L R/.[21] In GK, GA //i// has been rounded to /y/ in similar environments to the development

[20]It is not clear from Holmer's monographs on GK and GA if all or even some of his recorded instances of /i/ in the environment / __ C corresponded to /y/ in those dialects which had the high front rounded phoneme. Holmer in GA: §80 (1) claims that original //i// becomes /y/ before the segments '*c, dh, g, gh, n, nn, r* (not regularly), *rr*'. However, he lists no examples of /y/ in the environments __ k, g nor have I noted any in the text. *Sioc* for example is not attested in GA. Examples of /y/ before /ɣ/ do occur. These will be discussed below under the discussion of the development of //i// before fricatives.

[21]The retraction of //i// to /u/ before original //l// may only have occurred once the merger of //l// and //L// had taken place, see chapter 1. It is worth pointing out that retraction and rounding is particularly common in words containing word initial //i// and in words where //i// is preceded by //ʃ//.

//i// > /u/, i.e. before the velarised segments /L N R/. Our analysis suggests that in ScG the retraction and rounding of //i// originated before the velarised segments //L N R//.

It is to be noted that original //i// has not generally been retracted to /u/ (or /ɯ/) before //R// in ScG dialects,[22] although it should be said that evidence for the development of //i// before //R// is scarce in the monographs, perhaps reflecting the phonotactics of the language. The only examples which I have noted are *siorrachd, siorram* in GL, both realised as /u/.[23] Dieckhoff (EDGL) notes /i/ in *siorraidh, siorrachd.* Based on this evidence alone it is impossible to suggest an ordering for the two changes (A) //R'// > /R/, (B) //i// > /u/ / __ R in ScG dialects. The retraction and rounding of //i// in GL *siorrachd, siorram* may be due to the preceding /ʃ/ in any case.

It is perhaps significant that //i// is only rarely retracted to /ɯ/ in ScG. It is attested only marginally, e.g. GL *riochd, tiomnadh, tiormachadh, *briogais.* Cf. also *ciod* /ɯ/ (EPG). The rare occurrence of /ɯ/ for /i/ before nonpalatals may imply that the change //i// > /u/ did not invlove the intermediate stage /ɯ/.

GK, GA /y/

In chapter 2, we concluded that front rounded vowels are perhaps best explained as developments of original back unrounded vowels, possibly as a result of contact with Lowland English. If, however, we assume that /y/ has developed naturally within Gaelic without influence from English, the question arises how to explain /y/ from //i// in the environment / __ C. There are three possibilities:

(A) //i// was rounded to /y/ through the influence of a following velarised consonant

(B) //i// was diphthongised to /iu/ and subsequently reduced to /y/ before nonpalatal consonants

(C) //i// was retracted to /u/ and subsequently fronted to /y/ following palatal consonants

Of these possibilities, (B) and (C) are perhaps the most attractive. If, however, these derivations are correct, they imply that retraction to /u/ or at least the development of clear *u*-glides was more common in GA and GK than our discussion above implies. If correct, this would in fact place GA and GK alongside GL and Skye (Km) where the

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[22]Except in GL. Cf. /i/~/y/ *giorra* GK.

[23]*Siorra(m)* is a borrowing from Middle English *shirreve* according to MacBain, EDGL: s.v. *siorra.*

change //i// > /u/ is quite common. It is interesting to note (and perhaps significant) that the change //i// > /y/ in GA and GK dialects occurs only before the segments //l n N r R m x//. Recall that these (with the exception of /x/) are precisely the segments before which //i// has been retracted to /u/ in other dialects.[24]

Minor:

//i// > /ɯ/, /u/ / R' __ C', C

Original //i// has been retracted to /ɯ/ and rounded to /u/ following original //R'// and preceding a palatal consonant in some words in ScG dialects, e.g. *r(u)ig, r(u)ith, r(u)ighinn* (vn). This change is also attested following //R'// preceding nonpalatals, e.g. *rionnach, rionnag, riochd.* The development in such cases is to be explained as a result of the depalatalisation of original //R'// to /R/. The development is illustrated in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
r(u)ig	ɯ	ɯ	ɯ	ɯ	i(~y?)	i~y	i	ɯ~u
r(u)ith	u	u	ɯ	ɯ	--	i~y	i	ɯ~u
r(u)ighinn[25]	i	u	--	--	i[26]	--	--	--
righinn[27]	--	ui	--	u	--	y~i	--	ɯi
rionnach	ũ	--	u	--	--	--	o	--
rionnag	ũ	--	--	--	--	--	o	a~ɔ
riochd	ɯ	i	--	--	--	--	--	ɤ

Table 7B.5

innein 'anvil'

Original //i// has been replaced by /u/, /ɯ/ in some dialects in the word *innein* 'anvil' (< Old Irish *indeóin*, see DIL s.v. See the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
innein[28]	ũ	i[29]	ɯ[30]	ɯ[31]	--	i	--	

Table 7B.6

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[24]i.e. before //n N l L m R//. See table 7B.1 above.

[25]'reaching'.

[26]*ruigheachd.*

[27]'rough, tough'.

[28]We can also add the following forms: I have noted /u/ in the Isle of Raasay; Domhnall Eirdsi MacDhomhnaill informs me that /i/ is common in all of the Uists; Dieckhoff (PDSG) has /i/.

[29]But /u/ Scalpay, Harris. Personal communication from Mórag Macleod.

[30]Km.

[31]RP.

The retraction of //i// before palatals occurs very rarely indeed in ScG[32] which suggests that the development of /u/, /ɯ/ in *innein* may be due to analogy with another lexical item. The vocalism of *innein* may have been affected by analogy with *uinnean*, the word for 'onion' which in some dialects is also the word used for 'ankle'.[33] The similar shape of the 'anvil' and the 'onion' could have led to the adoption of *u*-vocalism in *innein*. It could be argued that the fronting of /u/ to /i/ in the word *uinnein* 'onion' led to homophony between *uinnein* and *innein* with *i*-vocalism. This homophony may have led to homophony with *u*-vocalism in other dialects.

Other minor developments / __ C'

The remaining minor developments of //i// involve various types of lowering which may be summarised as follows:

(1)	/ɛ/, /ɔ o/, /ɤ/	__ C
(2)	/ɛ/, /ɤ/	__ C'
(3)	/a/	__ C[+nasal]

(1) /ɛ/, /ɔ o/, /ɤ/ __ C

Lowering to /ɛ/ before nonpalatals is attested in the word *smior* in ESG and EPG. It is possible, however, that the vocalism in such cases derives from an old oblique form *smear* (G sg), see DIL s.v. *smir*. Lowering to /ɛ/ also occurs in *iosgaid* 'back of the knee' (ESG), see below. This appears, however, to have been contaminated with *easgaid* < *easgainn* 'eel', see ESG: 166.

Lowering, retraction and rounding occurs in the following words and dialects:

/ɔ/	*ciontach* (GL)
/ɔ/ ~ /a/	*fionnadh, ionnsaich, ionnsaidh, mionnan, rionnag* (EPG)
/o/	*iomlaid, rionnach, rionnag* (ESG)

It is significant that these developments occur only before nasal segments. Since, in the case of EPG, //a// is frequently raised to /ɔ/ before //N//, e.g. *gann* /a/ ~ /ɔ/, it seems reasonable to assume that instances of //i// > /ɔ/ before nasals in EPG are to be explained as secondary developments of /a/. In the case of ESG, however, raising of

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[32]The only other instance which I have noted is [üd'ak] *iteag*, attested for Cowal in the *Survey of Gaelic Dialects*, see Ó Dochartaigh (1994).

[33]See ESG for example.

//a// to /ɔ/ is only generally attested before //l// which means that a different explanation for the development //i// > /o/ needs to be sought for the ESG examples *rionnach, rionnag*. We have already noted that retraction to /u/ is common in ScG dialects before //N//. Lowering in the case of ESG *rionnach, rionnag* may have been caused by a preceding /r/ < /R/ < //R'//. This does not explain //i// > /o/ in *iomlaid* since retraction to /u/ is not common in ScG before /m/. However, in ESG metathesis has occurred in *iomlaid* which is realised as /joLəmad'/ (ESG: 166). It is possible that /o/ in this word represents a secondary lowering of /u/, retracted from //i//. Cf. *fulaisg* /o/ < //u// (ESG). Retraction to /ɔ/ in *ciontach* (GL), if it is not a literary pronunciation, may represent a back formation based on the noun *ciont* /ɔu/ with onset /ɔ/.

Lowering and retraction to /ɤ/ occurs in the following words and dialects:

/ɤ/ *piorna* (GL)
/ɤ/ *ciomag, crioslach, iosgaid* (/ɛ/~/ɤ/) (ESG)
/ɤ/ *gliocas* (EPG)

We have already noted that ESG *iosgaid* may have been influenced by *easgaid* 'eel'. ESG *ciomag* may be a borrowing from English *crumb* in which case /ɤ/ might be expected.[34] Lowering and retraction following Cl and Cr groups is noteworthy in the case of *crioslach* (ESG) and *gliocas* (EPG). GL *piorna* /ɤ/ is a borrowing from Scots *pirn* perhaps with original lax [I] in the Scots form, see GL: 85.

(2) /ɛ/, /ɤ/ __ C'

Lowering to /ɛ/ and /ɤ/ before palatals occurs in the following words and dialects:

/ɛ/ *Inbhir-Nis* (GL)
/ɛ/ *inchinn* (S)
/ɛ/ *mil, milis* (R)
/ɛ/ *bileag* (ESG)

/ɤ̃/ *inchinn* (GL)
/ɤ/ *Inbhir a' Bhac* (EPG)

[34]The loss of *r* in *ciomag* may be compared with the insertion of *r* in *briosgaid* < *biscuit*.

Lowering in the case of *Inbhear* in certain instances (GL, EPG) may be due to its relatively unstressed position in genitival noun phrases. Lowering following labials and preceding /l'/ is noteworthy in *mil, milis* (R), *bileag* (ESG). However, the vocalism of *mil, milis* (R) may have been been influenced by the oblique form *meala* (G sg), cf. /a/~/ɛ/ *speal* (R: 69).

The reflexes of *inchinn* in ScG are illustrated in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
inchinn	[ɤnɤ]x-	[inɤ]x-	[ɛnɛ]x	--	inax-	--	--	ɛn·x

Table 7B.7

Realisations of the word for 'brain' appear to derive from *eanchainn,* the normal spelling in modern ScG,[35] rather than historical *inchinn*. If *eanchainn* derives directly from Old Irish *inchinn*, then we must posit the depalatalisation (perhaps by dissimilation) of the medial cluster *-nch-* //n'x'// to /nx/. This would have resulted in the form **ionchainn*. If this were the case we might expect /i/ or perhaps /u/ as the synchronic reflex of //i// in *inchinn*. Lowering of //i// to /ɛ/ is of course conceivable; we might compare /ɛ/-realisations in the words *inbhear* and *iosgaid* discussed above. However, instances of lowering to /ɛ/ are sporadic in ScG. Lowering to /ɛ/ in *inchinn* appears to be fairly universal which suggests that factors other than depalatalisation and lowering were involved in the development *inchinn* > *eanchainn*. Contamination and analogy with another lexical item may have played a role. One possible candidate for such contamination would be Old Irish *enech* 'face, front',[36] which becomes *eineach*[37] or *eanach*[38] in modern ScG.[39] Realisations with /i/ (e.g. in Ba and GK) may reflect original //i// or could alternatively represent a raising of /e/ to /i/ before the nasal /n/. On the raising of //e// before nasals, see chapter 4. Finally, based on the evidence of *inchinn* and *inbhear* (sporadic instances), it could be argued that lowering (and retraction) of //i// may have been a possibility before svarabhakti groups.

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[35]See EDGL s.v., PDSG s.v.. Note aso the form *eanchaill* which derives from *eanchainn* through dissimilation of both *n* sounds. Cf. Irish *airneál* < *airneán,* DD.

[36]Perhaps originally 'brow(s)', see DIL s.v. *enech*.

[37]Dwelly s.v..

[38]EDGL.

[39]*Eanchainn* is normally feminine in ScG. However, in certain phrases it appears to be masculine: *chuir e an t-eanchainn ás; chaidh an t-eanchainn ás.* I am grateful to Dr Iain MacAonghuis for providing these examples. The fact that *eanchainn* can in some cases be masculine may support the case for contamination with *eineach* which is masculine. Could ScG *eanach* 'dandriff, scurf, down' be related to *eanchainn*?

(3) /a/ __ C[+nasal]

Lowering of //i// to /a/ before nasals is common only in EPG, e.g. *ionnsaich, ionnsaidh, fionnadh, mionnan, rionnag* in which case it normally alternates with /ɔ/ (a secondary development of /a/). It may be significant that lowering to /a/ occurs following originally palatalised labials and original //R'// (> /R/ (> /r/), which share the common development of having lost their phonemic palatality. It is possible that the lowering of //i// to /a/ may in some way be connected with the loss of the high front quality of these segments. We may also note that this lowering occurs frequently in absolute word initial position. For further discussion of the lowering of //a// before nasals, see section C below.

__ F[+voice] [+labial]

Instances of //i// before labial fricatives are only rarely attested in the monographs. The only representative instance of the development of //i// before //v// which I have noted in the monographs is the word *siubhal*. Where it is attested the development has invariably been retraction and rounding to /u/. I have found no instances of //i// before //ṽ//. The only representative instance of the development //i// before //v'// which I have noted is the pronoun *sibh(se)* in which case the final fricative is usually vocalised.[40] In *sibh(se)* //i// is retracted and rounded to /u/ in GL, DOH (Ba, Ha), S and in some dialects of ESG.[41] Original //i// is retained in R, GK, GA, some dialects of ESG,[42] and in EPG. //i// is generally lenghtened to /i:/ in the emphatic form *sibhse* with loss of the fricative.[43] It should be noted also that the front rounded vowel /y/ occurs alongside /i/ in GK and GA. The development //i// > /u(:)/ *in sibh(se)* implies the development //v'// > /v/ (> /w/) in word final position.[44]

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[40]But note [ʃəv] Skye, and /ʃib/ Ault. (R).

[41]/u/ B,G.

[42]/i/ E.

[43]However, note /u:/ B,G (ESG) and also /i/ /ʃiʃ/ EPG. Note also /ɯi/ Ault., Ross-shire.

[44]Compare the development of PRES/FUT *gheibh* which is frequently realised as /o/ in ScG dialects, see SR: 122 (cf. /ev/ DOH, S). I would derive future forms /jo/ from *gheibh* as follows: //ev'// > /ew/ > /o/. Others derive modern **gheobh* from an old *é*-future form *ghéabh* > *gheobh* which is, however, difficult to reconcile with the short /o/ in modern ScG forms, see Jackson (1976). If we derive the ScG forms /jo/, /jev/ etc. from **gheabh* from *gheibh* with loss of palatalised //v'//, the Classical Irish forms *geabh-* and *do-gheabh* — the origin of which is so far unexplained, see Jackson (1976: 99) — may represent a Scotticism in the Classical Irish language, cf. Jackson (1976: 99 n. 21).

__ F[+voice] [+dental]\[+velar]

Instances of //i/ before original //ð/ɣ// are only rarely attested in the monographs. The most commonly occurring representative instance of //i// before //ð/ɣ// is the word *fiodh* where original //i// and /ɣ/ have been retained in Hebridean dialects but retraction of the vowel and vocalisation of /ɣ/ have occurred in eastern dialects such as ESG and EPG.[45] Both /i/ and /y/ occur in GK and GA. There is therefore a correlation between the retention of //i// and the velar fricative /ɣ/, and the vocalisation of /ɣ/ and retraction of //i// to /u/, see chapter 8 for further discussion. In ESG and EPG the vocalisation of /ɣ/ results in a /ɯ̯/ or /u/-like glide which was subsequently vocalised to yield /u/, with the concomitant devocalisation of original //i// to a glide following the labial /f/ < //f//.

	GL	DOH	S	R	GK	GA	ESG	EPG
fiodh	iɣ	iɣ	iɣ	iɣ	iɣ~yɣ	ig	ju	ju

Table 7B.8

A similar development is attested for //i// before prevocalic //ð/ɣ// in a small number of words, e.g. *frioghan* (GL), *Giogha* (GK), *fiodhan* (EPG). In the latter example, however, //i// is retracted to /u/ and the velar fricative is retained. The only instances of the development of //i// before preconsonantal //ð/ɣ// which I have noted are *iodhbairt* and *tiodhlaic*. *Iodhbairt* is attested only in GL where it is realised as /i:/. The following table illustrates the development of *tiodhlaic(eadh)*:

	GL	DOH	S	R	GK	GA	ESG	EPG
tiodhlaic	iə	iə	iə	--	iə	i:	iə	--[46]

Table 7B.9

Holmer gives the forms /jiəLix'g/ (GK), /ji:Lig'/ (GA) and derives them from *dh'adhlaic*. However, /iə/, /i:/ can hardly derive from *adhlaic* directly. The forms /jiəLix'g/ (GK), /ji:Lig'/ (GA) may represent contamination products involving *adhlaic* and *tiodhlaic,* although this is unnecessary. Based solely on the evidence of *iodhbairt* and *tiodhlaic*, one is led to conclude that /i:/ is the regular development of //i// before preconsonantal //ð/ɣ// in ScG. The development of a /ə/-gliding diphthong frequently in the case of *tiodhlaic* may be explained as deriving from /i:/ followed by a [ə] glide before /L/. The development of a glide /ə/ before /L/ is regular in ScG.[47] Alternatively, /ə/ may in such instances reflect an original /ɯ̯/-like glide which developed from /ɣ/.

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[45]Note /ɯ/~/u/ *fiodh* EPG.

[46]But note /ã:/ *adhlacadh* EPG.

[47]See /iə/ *siol* GL, DOH, S, R.

The development of a long vowel /i:/ in reflexes of //ið/ɣ// sequences is curious in ScG since we might expect a *u*-gliding diphthong or /u(:)/, cf. the developments of //a e// discussed in chapters 3 and 4. The vocalisation of /ɣ/ < //ð/ɣ// must originally have given rise to [iuɻ] sequences. That these have been reduced to /i:/ and /iə/ preconsonantally suggests a tendency for back-gliding sequences with /i/ as onset to retain the original stress on the //i//. In support of this, we may compare the reduction of Old Irish //iu// diphthongs to /i/, e.g. *fius* > *fios* /i/, *ciunn* > *cionn* /i/, see McCone (1996: 139). Against it, we may compare the development //iu// > /u/ in *fliuch* (see appendix 8) in which //iu// precedes the velar //x//.

Original //i// has been retained before word final and prevocalic //ð'/ɣ'// in all ScG dialects. No instances of the development of //i// before //ð'/ɣ'// are attested in SR. I have noted no examples of the development of //i// before preconsonantal //ð'/ɣ'//.

Minor developments

Minor developments of //i// before //ð'/ɣ'// involve words with original initial //R'//, e.g. *righinn* 'rough' and *r(u)ighinn/r(u)igheachd* (vn) 'reaching'. Their development is illustrated in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
r(u)ighinn (vn)[48]	i	u	--	--	i[49]	--	--	--
righinn[50]	--	ui	--	u	--	y~i	--	ɯi

Table 7B.10

Retraction to /ɯ/ and rounding to /u/ in these words may be compared with realisations of *r(u)ith, r(u)ig* discussed above. It is worth noting that reflexes of *r(u)ighinn* (vn) /u/ and *righinn* /ui/ are distinguished in some dialects (e.g. DOH (Ba)).

__ SON#\+C[+hom]

I have noted no instances of the development //i// before //R// or //L//. Lengthening to /u:/ before //N// is the norm for most Hebridean dialects and also in some ESG dialects.[51] The development of *u*-gliding diphthongs (/iu:/) is common in initial position before //N// in some dialects e.g. DOH, R. Diphthongisation to /ɔ̃ũ/ before

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[48]*'reaching'.*
[49]*ruigheachd.*
[50]'rough, tough'.
[51]i.e E.

//N M// is the norm in GL. With this may be compared the development of *u*-gliding diphthongs (/ãũ/) in some dialects of ESG.[52] The development of /ɔu/ and /au/ in GL and ESG respectively represents a lowering of the onset of an original monophonematic diphthong /Uu/, attested in Lewis and Harris dialects (DOH: 145).

Both /i/ and /y/ are attested before //N M// in GK and GA although lengthening to /i:/ and /y:/ also occurs. Lowering to /a/ (and /ɔ/) is common in EPG before //N// as noted above. Original //i// appears to have been retained in most dialects before //ŋ//, e.g. *iongantach, iongantas*. However, /i/~/y/ is attested in GA (e.g. *iongantach*); /u:/ (E), /ʏ:/ (B,G) are attested in ESG (e.g. *ionga*).

Lengthening to /u:/ and diphthongisation to /ɔũ/, /ãũ/ before //N M// in ScG dialects presupposes that (a) //i// was retracted to /u/ or (b) that a /u/-like glide had developed prior to the development of vowel lengthening and diphthongisation before the sonorants //N M//.

Original //i// has been lengthened to /i:/ in most Hebridean and western Highland dialects before the palatalised segments //L' N ' M' ŋ'//. Lengthening is also attested in ESG.[53] Lengthening to /i:/ is common in GL only before the segments //M' ŋ'//; otherwise diphthongisation to /ei/ is the norm before the segments //L' N'//. The GL development can be explained as a lowering of the onset of an original monophonematic /Ii/-like diphthong, attested in Lewis and Harris dialects, see DOH: 145. Original //i// is retained in GK, GA , and EPG before the segments //L' N ' M' ŋ'//.

The pronoun *sinn*

The pronoun *sinn* may be (a) unstressed, (b) stressed or (c) emphatic, the realisations of which in ScG dialects are summarised in the following table:

	GL	DOH	S	R	GK	GA	ESG	EPG
(a) sinn	ʃiN'	ʃiN'	ʃiN'	ʃiN'	ʃin'	ʃin'	əɪn'	ʃin
(b) sinn	--	--	--	--	ʃin':	ʃin':	--	--
(c) sinne	ʃiN'ə	ʃiN'ə	ʃiN'ə	ʃiN'ə[54]	ʃin'ə	--	ʃin'əs	--

Table 7B.11

[52]i.e. B, G.
[53]But note /i/ *cinnteach*.
[54]But /ʃɯN'ə/ Ault.

It is clear that //i// in the unstressed forms of the pronoun *sinn* is never lengthened to /i:/. Stressed forms of *sinn* (as opposed to the emphatic forms *sinne*) are unfortunately only attested in GK, GA where *sinn* is realised with a long final /n':/. I have noted no examples of a lengthened /i:/ for stressed *sinn* in the monographs although such forms do exist.[55] Unstressed forms of the pronoun *sinn* are minor exceptions to the lenghtening rule of //i// before //N'//.

[55]Personal observation. Cf. also MacAulay (1992a: 213).

Section C
A Comparison of the Development of //i// in Irish and ScG

__ C, C ≠ F[+voice], SON#\+C[+hom]

Original //i// has been generally retained in both Irish and ScG dialects before palatal consonants other than fricatives and sonorants. Before nonpalatal consonants original //i// may be retained or retracted and rounded to varying degrees in both Irish and ScG. In terms of geographical distribution, we noted that the retraction of //i// to /u/ occurs most commonly in southern Irish dialects (i.e. in Munster and Connacht) whereas it is less common in Donegal and ScG dialects. A comparison of Irish and ScG dialects, based on the relative occurrence of retraction and retention of original //i// before nonpalatals, establishes yet another important isogloss which separates Munster and Connacht Irish dialects from Donegal and ScG dialects. In Munster and Connacht dialects retraction of //i// is more common than the retention of //i// whereas in Donegal and ScG, retention of //i// is more common than retraction. This suggests that the retraction of //i// to /u/ may have originated in southern Irish dialects, although we suggest below that the retraction of //i// to /u/ may have occurred independently in both languages before certain (velarised) segments.

Although both developments (i.e. the retraction and retention of //i//) are shared in both languages, the environments in which both occur differ somewhat. The hierarchical orderings for the optimal following consonantal environments in which //i// was retracted to /u/ in both languages are:

Irish: //i// > /u/, /o/ __ m = x >> L >> k >> l >> N (>> b >> n >> r >> s >> t)

ScG: //i// > /u/, /ɯ/ / __ N >> l, L >> R >> m (>> ŋ >> r >> n = s = b = g)

Although retraction of //i// occurs in similar phonological environments in both languages vis. before the segments //L l N m//, there are nevertheless significant differences between both languages in terms of the ordering of these optimal environments. For instance, a following /m/ is more likely than /N/ to cause retraction of //i// in Irish dialects. However, a following /N/ is more likely than a following /m/ to cause retraction in ScG. A following /L/ is an optimal environment for retraction in both languages and is placed sequentially between /m/ and /N/ in both. These differences between Irish and ScG suggest that the retraction of //i//, although occurring in similar phonological environments, may have developed independently in

both languages.[1] It may be significant that the retraction of //i// to /u/ has occurred in a significant number of words containing word initial //i//. This suggests that the optimal environments for the retraction of //i// to /u/ in both languages has been (a) in word initial position, and (b) preceding the velarised sonorants //N L (R)// and the nasal labial /m/ although retraction before /m/ is considerably less common before /m/ in ScG than it is in Irish.

We also noted that there were certain environments in both languages which favoured the retention of //i//. These are as follows:

Irish: //i// > /i/ / __ r = s >> t >> n >> b (>> L = N >> k >> l >> m >> x)

ScG: //i// > /i/ / __ b = g >> m = r >> ŋ >> s = n (>> l, L >> R >> N)

Although the hierarchical ordering for each language is different, we note that //i// is generally retained before the segments /r s n/ and /b/ in both languages. The segments /r s n/[2] share the common feature of being non-velarised in Gaelic dialects with the exception of Munster dialects. The tendency to retain //i// before the labial /b/ is noteworthy when compared with the tendency towards retraction preceding the nasal labial sonorant /m/. We may note as a corollory to this that the change //i// > /u/ is never or rarely ever attested before /r s n/. The exact following consonantal environments for which the change rarely, if ever, occurs are:

Irish: /s t r/[3]
ScG /s r n/ and /g/[4]

Our consideration of the evidence from both Irish and ScG suggests the following rules for the development of //i// in both languages:

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[1]The differences in development discussed here may be more apparent than real as they may reflect the incomplete nature of the sources utilised in this study.
[2]Also /t/ in Irish, excluding Munster dialects.
[3]I have noted no instances of //i// before /d/ in the Irish monographs. The forms *siod-bháisteach, siod-mhagadh* occur with /u/ in GCF. However, *siod* probably derives from *sead* with //e//, see FGB, s.v. *sead, seadbháisteach*. A search of FGB using the Gléacht package provides c. 50 examples of *iod,* the majority of which are loan words. The environemnt __ t should perhaps be added to the environments for ScG although I have found no instances of //i// / __ t in the monographs other than *ciotag* 'rag' EPG which has /i/. Dieckhoff (PDSG) has /i/ in *ciotach, ciotag*. /i/~/u/ is attested in some Munster dialects before /s/, e.g. *scrios*. Note that /s/ is a velarised segment in Munster dialects.
[4]I have noted no examples from the Irish monographs of //i// occurring before /g/.

(1) //i// → /i/ / __ C [–velarised]
(2) //i// → /u/ / __ C [+velarised]

These rules account for the fact that retraction occurs more commonly in southern Irish dialects than in northern Gaelic dialects since the consonant system of Munster, based on the opposition [+/–velarisation], has a greater number of velarised consonantal segments than other Gaelic dialects.

The usual explanation which is put forward to explain the development //i// > /u/ in Gaelic is a shift of stress within the syllable from the original nucleus //i// to a following on-glide [u]: [i^{u}] > [^{i}u] (see McManus 1994: 347 for instance). The development of a *u*-like on-glide before the velarised sonorants //L N R// is acceptable and understandable on articulatory grounds. Indeed the lack of such prominent *u*-like on-glides before the neutral segments /s r n/ explains satisfactorily why //i// has been frequently retained in Irish and ScG dialects.

Although we argued against the stressing of on-glides in the case of the development //e// > /a/ in Gaelic generally, it is nevertheless important to note that the optimal environments for both developments //e// > /a/ and //i// > /u/ is the position before velarised //L N (R)//. We would like at this juncture to consider one of the alternative suggestions put forward by us to explain the development //e// > /a/, as a possible explanation for the development //i// > /u/.

The fact that the change //i// > /u/ occurs more commonly before the most sonorant of the Gaelic consonants suggests the possibility that the change //i// > /u/ may have occurred as a result of an increase of sonority in the vowel //i//. If we accept that the change //e// > /a/ occurred as a result of an increase in the sonority of the vowel //e//, and that a similar increase of sonority explains the development //i// > /u/, then this suggests that /u/ is more sonorous than /i/ in Gaelic. If this is accepted, the change [i^{u}] > [^{i}u] can be seen as the result of the operation of a sonority principle which increases the sonority of vocalic segments before sonorant consonants. The lowering of //i// to /a/ before certain nasal segments, to be discussed below, may also be explained as a result of an increase in sonority in the vowel nucleus.

A preliminary search of FGB using the Gléacht package demonstrates that *-urr, -unn, -ull* sequences at word boundaries and *-ur(r)-, -un(n)-, ul(l)-* sequences before homorganic consonants (where we would expect to find reflexes of original //R N L//

respectively) are relatively uncommon, and in some instances do not exist at all in Irish. Many instances of such are loanwords from French and English, e.g. *ungcail, cuntas, buntáiste* etc. The only exceptions to this are the sequences *-url-*, *-urn-* which occur frequently in the language e.g. *urla, urlabhra, urlacan, urnai* etc. This preliminary survey of original //uR uN uL// sequences shows that such sequences are relatively rare in Irish. This suggests a further possible contributory factor for the retraction of //i// before //L N R// in Gaelic dialects, namely that the retraction may have occurred in the mini-phonological environments __ L N R because of a phonological 'gap' in the high-back mini-phonological space defined by the environments __ L N R.

Minor

The depalatalisation of original //R'// to /R/ affected both a preceding and a following //i//. Original //i// in *giorra* (< *girre*) is generally retained in ScG dialects but has been retracted to /u/ in some Irish dialects. Given that retraction of //i// to /u/ is not common before /r/ in Irish dialects, it was suggested that //i// was retracted to /u/ in some Irish dialects following the change //R'// > /R/ but preceding the change /R/ > /r/. The retention of //i// in *giorra* < *girre* in all (?) ScG dialects suggests that //i// has not been retracted to /u/ in ScG before /R/, in this word at least.

Original //i// has been retracted to /u/ following original //R'// in some Irish dialects only before nonpalatals. Before palatals the retraction does not take place except in the word *rith* which is realised as /u/ in some Munster and south Connacht dialects and as /ɯ/ in Donegal. Retraction of //i// to /u/ and /ɯ/ is common in ScG dialects before both palatals and nonpalatals. Irish and ScG differ, however, in that retraction of original //i// occurs frequently before palatals other than //θ'// > /h/ in ScG, e.g. in the words *r(u)ig, r(u)ighin, r(u)ith*.[5] This difference between Irish and ScG dialects may have important implications. The retraction of //i// to /u/ in realisations of *rith* in Irish dialects may be explained in various ways. With the reduction of the dental fricative //θ'// to /h/, there is some evidence which would suggest that *rith* came to be analysed as being *rioth* underlyingly, particularly in some Munster dialects. Indeed in IR, *rith* is realised as /rux/ which represents an instance of /h/ > /x/ / __ #.[6] We may therefore conclude that the change //i// > /u/ in *rith* is in fact a further instance of the change //i// > /u/ before nonpalatals, i.e. in the environment / __ C rather than / __ C'.

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[5]ESG has /i/ in *r(u)ith, r(u)ig*.
[6]Compare *guth* /gux/, IR: §200.

Instances of /ru/ for *rith* in ICF may be seen as a further instance of the variation between /i/ and /u/ in word final position following the segments /r s t d/.[7]

The above arguments would imply that the environments for the retraction of //i// following original //R'// are different in Irish and ScG:

	Irish	**ScG**
//i// > /u/	/ R' __ C, #	/ R' __ C, C'

We have seen that the change //i// > /u/ is well attested in both Irish and ScG before certain nonpalatals and instances of the change following original //R'// represent a subset of these, the retraction is such cases owing more perhaps to the following consonant than to the preceding //R'//. The retraction of //i// following //R'// but preceding palatals distinguishes ScG dialects from Irish dialects. This difference of treatment may be due to the fact that /R/ (< //R'//, //R//) has been retained more commonly and for a longer period of time in ScG dialects than in Irish dialects.

Lowering of //i//

Lowering of //i// to /e/ occurs before the sonorant segments /r/ and /r' l' L'/ in Irish dialects and is particularly common in Connacht dialects. Lowering of //i// to /ɛ/ occurs in ScG before /r/ in *smior* in some ScG dialects (ESG, EPG), the nasal //n'// in *inchinn* and *inbhir*, and before //l'// preceded by labials in *mil, milis* (R), *bileag* (ESG) but is not otherwise commonly attested. We noted that *inchinn* may not represent a straightforward case of lowering of //i// to /ɛ/ and may in fact be explained by analogy or contamination with *eineach* 'face'. A comparison of the Irish and ScG material suggests that there is a common tendency in both languages, although by no means generally attested, for the lowering of //i// to occur before the segments //r// and //l'//, both originally 'lenited' sonorants, particularly when preceded by (palatalised) labials.[8]

Lowering and retraction to /o/ also occurs in Irish dialects before /r/ (< //r//, //R//) and /L/ (< //θl//), /xt/ and is once again particularly common in Connacht dialects. Lowering and rounding to /o/ is attested in ESG in the words *rionnach, rionnag, iomlaid (> iolamaid)*, in EPG in many words before //N// although the latter cases probably represent a secondary raising of /a/. *Rionnag, rionnach* (ESG) (and cf.

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[7]See ICF: §29, §74, §77. I have noted alternation between /i/ and /u/ in the word *dubh* in southern Connacht.

[8]Cf. the lowering of //i// before //N// following originally palatal labials.

riochd below) are the only convincing examples which I have noted as possible examples of *r*-lowering in ScG dialects. Lowering and retraction to /ɤ/ is common following Cl' and Cr' clusters in some eastern dialects (e.g. ESG, EPG). Lowering to /ɤ/ is attested in *riochd* in EPG. To summarise then, there would appear to be a minor shared tendency to lower //i// in the vacinity of certain *r*- and *l*-sounds in both languages which is more common in some dialects than others.

//i// >/a/ / __ N

The development //i// > /a/ is not widespread in either Irish or ScG dialects. However, original //i// has been lowered to /a/ in a small number of words before the segments //n N//, particularly in word initial position in Connacht and Donegal dialects, e.g. *ionann, ionntu, fionnán*. The change is also attested in *innseacht* and *rith* in IE. This development appears to be common also in EPG where it occurs only before //N// following labials and in word initial position.[9] In both languages lowering to /a/ does not usually occur when //i// is preceded by what is synchronically a palatal or palatalised consonant, with the exception of *fionnán* in Irish. We have seen that there is some evidence to suggest that the retraction of //i// to /u/ may have been partly caused by a increase in the sonority of the vowel nucleus in the position before the sonorants //L N R//. That //i// was lowered to /a/ rather than retracted to /u/ as a result of the increase in sonority of //i// may have been caused by the narrowing of the vocal tract with the lowering of the velum in nasal syllables of the shape //iN//. In other words, //i// was lowered to /a/ in an attempt to maximise the sonority of the original vocalic nucleus in syllables whose codae contained certain nasal segments, i.e. nasal syllables whose very articulatory nature generally had the effect of minimising the sonority of preceding vocalic nuclei. The secondary articulation of velarisation, however, counteracted the general tendency of 'raising' (i.e. reducing sonority) in the nasal environment in those cases where //i// has been lowered to /a/. It has not hitherto been noted that //i// is lowered to /a/ only in dialects where lengthening and diphthongisation do not commonly occur before originally tense sonorants, i.e. in Connacht, Donegal and EPG. This correlation suggests a connection or relationship between lengthening and diphthongisation of //i// before //N// and lowering to /a/ before //N//. We claim that the relationship between both developments is the same underlying process of maximising the sonority of the vowel nucleus before the nasal sonorant //N//.

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[9]/a/ in such words frequently alternates with /ɔ/ which represents a secondary raising of /a/.

__ F[+voice] [+labial]

Instances of the development of //i// before //v// are scarce in both languages, the most commonly occurring instance being *siubhal/siobhal*. In ScG the development has been retraction and rounding to /u/ without lengthening; in Irish the same development has occurred except that /u/ has been lengthened to /u:/ with the coalescence of syllables. I have noted no convincing instances of the development of //i// before //ṽ// in either Irish or ScG. The only instance of //i// before //v'// which I have noted in both languages in the monographs is the pronoun *sibh(se)*. In Irish both the fricative and the original vowel have been retained in most cases. In ScG, however, the fricative has usually been vocalised; realisations of the original vowel include both /i/ and /u/. In emphatic forms, both /i:/ and /u:/ occur. Rounded forms with /u/ and /u:/ imply that the original fricative //v'// was depalatalised before the vocalisation of the fricative.[10] I have noted no instances of //i// before //ṽ'// in either Irish or ScG. We may summarise by concluding that the development of //i// before labial fricatives has been identical in both languages except before the palatalised labial fricative //v'//, which as we have seen, appears to have merged with original //v// in ScG dialects.

__ F[+voice] [+dental]\[+velar]

The development of //i// before //ð/ɣ// in word final position is generally /i/ in Irish and /i/, /u/ in ScG. Before prevocalic //ð/ɣ//, only /i:/ occurs in Irish. However, in ScG both /i/ and /u/ (the former more commonly) are attested in this position. Before preconsonantal //ð/ɣ//, lengthening to /i:/ is the norm in Irish whereas /i:/ and /iə/ (before //ðL//) occur in ScG. Before //ð'/ɣ'//, original //i// is generally retained in word final position in both Irish and ScG. Before prevocalic //ð'/ɣ'//, the result has been /i:/ in Irish and generally /i/ in ScG. However, some instances of the development //i// > /iə/ have been noted from Irish (e.g. *tighearna, (i)n[i]ghean*). I have noted no instances of //i// before preconsonantal //ð'/ɣ'// in either Irish or ScG. Following original //R'// and preceding intervocalic //ɣ'// in the word *righin* 'rough', we find both /i:/ and /əi/[11] in Irish dialects. In ScG we find retraction to /u/ or the development of *i*-gliding diphthongs /ui/, /ɯi/ in this word.

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[10]Compare the development of //i// in *siobhal/siubhal* with original //v//.
[11]/ai/ in ICF.

__ SON#\+C[+hom]

I have noted no examples of //i// before original //R// or //L// in either Irish or ScG. Lengthening is not attested in north Connacht, Donegal, GK, GA or EPG dialects. Otherwise retraction and lengthening to /u:/ is common before //N// and //M// in all Gaelic dialects. /iu:/ diphthongs occur in some ScG dialects in initial position.[12] However, diphthongisation is common in some Irish and ScG dialects before //N M//, e.g. /au/ IR, /ɔ̃ũ/ GL, /ãũ/ ESG. We have noted above that retraction of //i// to /u/ before //N M// is well attested in these dialects. The development of *u*-gliding diphthongs in these dialects would seem to imply that the retracted vowel was a lax one [U] which when diphthongised would regularly have given rise to *u*-gliding diphthongs with onset in the range /u/ – /a/. The development of /u:/ and *u*-gliding diphthongs in both languages implies that //i// was retracted to /u/ prior to vowel lengthening and diphthongisation before the sonorants //N M//. This provides the following rule ordering for both Irish and ScG:

(A) //i// > /u/ / __ N M
(B) V > VV / __ N M [13]

Retraction of //i// to /u/ is generally less common before //ŋ// in Irish, especially in ScG dialects.[14]

I have noted no instances of //i// before final //R'// in either Irish or ScG dialects. Lengthening and diphthongisation occur in Irish and ScG dialects except in north Connacht, Donegal, GK, GA and EPG where both developments are unknown. Lengthening to /i:/ before //L' N' M' ŋ'// is the norm in both Irish and ScG dialects. However diphthongisation is attested at both extremities of the Gaelic world, in IR (/əi/ before //L'//, /ai/ before //N' M'//) and in GL (/ei/ before //L' N'//).[15] The development of *i*-gliding diphthongs in these dialects may imply that //i// was realised as a lax [I] before //L N' M'// prior to lengthening before these tense sonorants.

We have noted that //i// in the pronoun *sinn* is not lengthened to /i:/ probably due to its common occurrence in unstressed positions in both Irish and ScG dialects.

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[12]Retraction to /u/ is common in Donegal and Connacht dialects before //M//.
[13]O'Rahilly (IDPP: 49-52) notes that diphthongisation before originally long liquids is attested in Irish and ScG from at least the sixteenth century. Further research will no doubt push this date further back in time.
[14]Although it does occur in Munster dialects. Cf. also /u/ *ionga* ICF.
[15]Note that /i:/ occurs before //M' ŋ'// in GL.

Stressed forms have been noted either with long /n':/ or long /i:/ in ScG dialects. Long /i:/ is attested for *sinn* in Irish dialects but usually only in song or verse registers.

Chapter 8
Summary

Section A

Summary of CG vocalic developments

Based on chapters 3-7, some general observations on common trends of development in the short vowel system as a whole will be made. Following the structure of chapters 3-7, we discuss these general trends under four headings: (i) before consonants other than voiced fricatives and sonorants, (ii) before labial voiced fricatives, (iii) before dental and velar voiced fricatives, (iv) before the sonorants R L N M [+/–pal] in word final position and before homorganic consonantal onsets.

(i) __C, C ≠ F[+voice], SON

The main developments in the CG short vowel system in these environments may be described in terms of (1) *raising*, (2) *lowering*, (3) *retraction*, (4) *fronting*, (5) *unrounding* and (6) *rounding*. Accordingly, the main developments in the CG short vowel system are set out as follows:

	Raising	Lowering	Retraction	Fronting	Unrounding	Rounding
//a//	+	–	+	+	–	+
//o//	+	+	–	+	+	–
//u//	–	(+)	–	+	+	–
//i//	–	(+)	+	–	–	+
//e//	+	+	(+)	–	–	(+)[1]

Table 8A.1[2]

In chapter 1, we described the distinctive features of the CG short vowel system as follows:

	High	Low	Back	Front	Unround	Round
//a//	–	+	–	–	+	–
//o//	–	–	+	–	–	+
//u//	+	–	+	–	–	+
//i//	+	–	–	+	+	–
//e//	–	–	–	+	+	–

Table 8A.2

[1]In ScG only before //ɣ// in which case there may have been an intermediate stage of /Eu/.
[2]Brackets indicate that a particular development is not commonly attested.

A comparison of tables 8A.1 and 8A.2 reveals that each is the exact mirror image of the other. For each CG vowel phoneme, its main developments may be accurately described in terms of the removal and addition of non-inherent CG features. If one succinct phrase were required to describe the main developments of the CG vowel system as a whole, the most appropriate term would seem to be (binary) switching. Each vowel change can be seen as an inverse increase or decrease in vowel colour.[3] Indeed the overall tendency of development of CG vowels may be summed up in the formula:

> *Gaelic vowels tend to lose inherent features and acquire vocalic features which they lack*

Our discussion of each of the CG short vowels shows clearly that the following consonantal environment has affected the development of Gaelic vowels more so than the preceding consonantal environment, with the exception of //a//, whose development has been affected more so than any other vowel by the preceding consonantal environment in particular cases. The development of //u// and //o// has also been dependent upon the preceding consonantal environment, but to a lesser degree than //a//.

If we now consider the following consonantal environments in which each of the CG vowel phonemes has been retained, we see that back vowels are generally retained before non-palatalised consonants, and that front vowels are generally retained before non-velarised consonants. In chapter 1, we described the distinctive features of the CG consonantal system in terms of the features [+/– velarised] and [+/– palatalised]. Of the 4 possible combinations of these features, we noted that only three combinations were possible i.e. C[+velarised] [–palatalised], C[–velarised] [+palatalised], C [–velarised] [–palatalised]. Since, in the presence of a plus, a minus is redundant, we may describe the consonantal system of CG as follows: C[+velarised], C[+palatalised], C[–velarised] [–palatalised]. The retention of each of the CG short vowel phonemes is illustrated in the following table, where + indicates general retention of inherent vocalic features in the relevant following consonantal environment and – indicates the loss of inherent vocalic features:

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[3]On the use of the term colour, see below.

	__ C[+veld]	__ C[+pald]	C[–veld] [–pald]
//a//	+	+	+
//o//	+	–	+
//u//	+	–	+
//i//	–	+	+
//e//	–	+	+

Table 8A.3: Retention of CG short vowels according to following environment

It follows from table 8.3 that the CG vowels may be classified into three groups according to the effect which a following consonant has had on their historical development: vowels which

(1) tend not to be retained before palatalised consonants (//o u//)
(2) tend not to be retained before velarised consonants (//i e//)
(3) tend to be retained in all following consonantal environments (//a//)

These groups correspond respectively to the set of vowels defined by the features [+back], [+front] and [–back] [–front]. In other words, there is a correlation between the distinctive features of the CG vowels and the distinctive features of the following consonantal environments in which the features of these vowels are retained. In particular, non-front vowels are retained before non-palatalised consonants, and non-back vowels are retained before non-velarised consonants. This may be expressed as follows:

V[–front] → V[–front] / __ C[–palatalised]
V[–back] → V[–back] / __ C[–velarised]

As a corollary to this, we may note that back round vowels tend to lose their features of backness, roundness, height or any combination of these, particularly when followed by palatalised consonants. Similarly, front unround vowels tend to lose their features of frontness, unroundness, height or any combination of these when followed by velarised consonants. The main developments of CG vowels can therefore be seen as one of progressive assimilation to the marked feature of a following consonant. This is similar to the opposite development which took place in Primitive Irish whereby progressive assimilation occurred between consonants and following vowels in Primitive Irish, ultimately resulting in the establishment of the phonemic opposition between palatal and nonpalatal consonants in Gaelic, see Thurneysen (GOI: 99 ff.), McCone (1996: 115 ff.). This type of progressive assimilation can be seen as the reconcilement of 'incompatible' features or properties occurring in sequence.

We now consider in turn each of the main developments (1) *raising*, (2) *lowering*, (3) *retraction*, (4) *fronting*, (5) *unrounding* and (6) *rounding*.

(1) Raising

Raising naturally only affects [–high] vowels i.e. //a o e//. Raising of //a// occurs commonly in Irish and ScG dialects in the environments: # k g __ l' r' d'. Raising of //a// is also attested before nasal segments, particularly in ScG. Raising of //o// before nonpalatals occurs in both Irish and ScG following the nasal //m// and before the segments //m L x//; however, the following consonantal environment for raising differs somewhat in both languages. Raising of //o// before palatals is more common in Irish dialects. Before palatal nasals, raising of //o// (to /i/) is most common in all Irish dialects. However, raising of //o// to /i/ also occurs in Munster and Donegal dialects before the segments //r' ʃ l'//. We concluded that raising of //o// to /u/ before palatals was unlikely to have occurred in any variety of Gaelic. Raising of //e// to /i/ before nonpalatals occurs more commonly in ScG than in Irish and is particularly common following original //m'// and preceding /s/. Before palatals, raising of //e// to /i/ is most common before nasals and following //m'//, particularly when followed by /ʃ/. Raising of //e// occurs in both languages before certain //r'//-svarabhakti clusters.

We may conclude that raising of CG vowels has occurred most commonly in nasal environments, particularly when preceded by the nasal labials //m m'//. There is also a tendency, by no means universal, to raise vowels before the segments //r' l'//.

In Connacht Irish dialects, raising of //a o e// (to /u/ or /i/) is common in words whose second syllables contain one or other of the long vowels /a: o:/. We have seen that in each case there is an implicational relationship between the variables /a:/ and /o:/ which may be expressed as /o:/ ⇒ /a:/. Rather than viewing the raising of //a o e// in such cases as 'Munster' influence or the result of the restressing of schwa-like vowels, we have argued that these raisings may be explained as reductions in sonority in words whose unstressed syllables contain relatively sonorant vowels. There is no need to posit an intermediate stage involving forward, secondary or equal stress of the heavy sonorant, originally unstressed, syllables.

One gets the impression, though it is not possible to accurately test it here, that mid vowels are generally more likely to be raised than low vowels. This implies that there may be an implicational relationship between mid and low vowels in relation to raising. This may be stated as low ⇒ mid.

(2) Lowering

Lowering naturally only affects [–low] vowels i.e. //i e o u//. Lowering of //i// occurs more commonly in Irish than in ScG where the change is rarely attested. Lowering of //i// occurs particularly before sonorant segments: in Irish it occurs particularly before the segments //r L xt// and // r' l' L'//. In ScG lowering of //i// is attested before //r// and //n' l'//, although it is not clear whether the lowering in the majority of cases is phonetically motivated. Lowering of //e// before nonpalatals occurs more commonly in Irish than in ScG dialects, although lowering is less common in Donegal dialects than in other Irish dialects. Indeed, we have noted a correlation between the following nonpalatal consonantal environments in which //e// is retained in Donegal, and those in which the high mid vowel /e/ (rather than /ɛ/) occurs in ScG (i.e. //s d g h//). Lowering of //e// in ScG occurs most commonly before the sonorants //L N R// and the velar fricative //x//. We concluded that the lowering of //e// most likely originated in the most sonorous environments. Lowering of //o// occurs most commonly in both languages in the environments f k __ l r s. Before palatals, lowering of //o// is more common in Irish than in ScG: //o// is lowered frequently when preceded by //k kr kL// and //sL//, but apparently not before //l' r'//. Lowering of //u// is more common in Irish than in ScG. In Irish, lowering is attested before the segments //r l x//, and in ScG before //l x m//. Lowering is attested in Irish and marginally in ScG before the segments //r' l'// and //r'//-svarabhakti groups.

We may conclude that lowering is generally more common in Irish than in ScG.[4] The relative infrequency of the lowering of ScG vowels may be due to the fact that the phonological vowel space is more compact in ScG than in Irish, thus restricting vertical movement in the vowel space. Clearly, lowering occurs most commonly before *r*- and *l*-sounds, and before the velar //x//. In the case of following *l*- and *r*-sounds, lowering of vowels can be seen as a further case of progressive assimilation between vowels and following consonants whereby the sonority of vowels is increased before sonorous sounds.

There is clear evidence to suggest that mid vowels are more likely to be lowered than high vowels. This suggests that there may be an implicational relationship between mid and high vowels with respect to lowering. This may be expressed as high ⇒ mid.

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[4]Lowering of //i//, //u//, //e// generally and also //o// before palatals occurs more commonly in Irish than in ScG.

(3) Retraction

Retraction naturally only affects [–back] vowels i.e. //i e a//. Retraction of //i// occurs most commonly in both languages before the segments //L l N m//,[5] that is, most frequently before before sonorants, particularly velarised sonorants. Although the retraction of //i// occurs in similar environments in both languages, we have argued that this development may have occurred independently in both. Retraction of //e// to /o/ occurs only rarely in both Irish and ScG, but is attested in both languages before the voiced velar stop //g//. In Irish, retraction to /o/ is also attested before other velars such as //k x//. This suggests a tendency for //e// to be retracted before true velars. If we include the development //e// > /a/ as a case of retraction, which in a structural sense it is, then we see that retraction of //e// occurs more commonly in Irish than in ScG. When raised to /o/, //a// is retracted in the environments k g __ l' r' d', most notably when preceded by the velars /k g/; we noted historical evidence for the retraction of //a// to /o/ also when preceded by labials.

We may conclude that retraction of non-back vowels has occurred most commonly in the vicinity of velarised sonorants and true velars.

If we exclude the development //e// > /a/ as a case of retraction, we note that retraction occurs more commonly with //i// than with //e a//. Similarly, retraction occurs more commonly with //a// than //e//. This suggests a tentative implicational relationship between high, mid and low vowels with respect to retraction, which may be expressed as mid ⇒ low ⇒ high. If, on the other hand, we include //e// > /a/ as a case of retraction, we note that retraction occurs more commonly with //e// than with //i a//. Similarly, retraction occurs more commonly with //i// than //a//. This provides an alternative tentative implicational relationship between high, mid and low vowels with respect to retraction, which may be expressed as low ⇒ high ⇒ mid. Both possibilities adumbrated here suggest, interestingly, an implicational relation between high and low vowels with respect to retraction which may be expressed as low ⇒ high, i.e. that high vowels are more likely to be retracted than low vowels.

(4) Fronting

Fronting naturally only affects [–front] vowels i.e. //u o a//. Fronting of //u// before palatals (to /i/) is almost universal in Irish[6] whereas it occurs only sporadically in ScG, particularly when preceded by the neutral segments //s t h// and by //Cr//. Fronting of

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[5]Retraction before //l// may only have occurred once it had merged with original //L//.
[6]Except in Donegal where //u// is frequently 'retained' following //k//.

//o// is more common in Irish than in ScG, where the development is only rarely attested. In Irish, fronting occurs most commonly before the segments //r' ʃ ṽ' l' n' N'//. In ScG, fronting of //o// is only attested following the neutral segment //s//. Fronting of //a// (to /e/) occurs especially in the environments # s __ r' l' d'.[7]

We may conclude that fronting is generally more common in Irish than in ScG, except with the vowel //a// where fronting occurs to a similar extent in both languages.[8] The relatively infrequent occurrence of fronting in ScG may be due to the existence of back unround vowels which occur in the phonological space 'between' front and back vowels.[9] In ScG, fronting, though infrequent, occurs following the neutral segment //s//. In both languages fronting of //u// appears to be more common than that of //o//.

In Irish, fronting appears to be more common with //u// than //o a//. Similarly, in Irish, fronting of //o// appears to be more common than with //a//. This suggests a possible implicational relation between low, mid and high vowels in Irish with respect to fronting which may be expressed as low ⇒ mid ⇒ high. Although fronting is relatively rare in ScG (with the exception of //a//), one gets the impression that fronting occurs more frequently with //a// than //o u//. Similarly in ScG, to judge by the examples discussed in chapter 6, fronting appears to be more common with //u// than //o//. This implies a possible implicational relationship between the low, mid and high vowels in ScG which may be expressed as mid ⇒ high ⇒ low. The Irish and ScG evidence when considered together suggest a possible common implicational relation between mid and high vowels with respect to fronting which may be expressed as: mid ⇒ high.

(5) Unrounding

Unrounding naturally only affects [+round] vowels i.e. //u o//. Unrounding of //u// occurs universally in Irish before palatals when //u// is fronted to /i/. Unrounding of //u// in ScG occurs most commonly when preceded by the neutral segments //s d t h// and when followed by the palatalised sonorants //N' L'// and the true palatals /g' j//. Before palatals, //o// is unrounded in the environments f k __ l r s. Before palatals, //o// is commonly unrounded in the environments k d L __ r' N' in both languages, particularly before //r'//-svarabhakti groups.

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[7]I have no instances of //a// > /e/ / s __ d'.

[8]If we accept that CG //a// was a non-front vowel.

[9]In the case of the development of //o//, we noted that fronting to /i/ in Irish corresponds to a certain extent to unrounding to /ɤ/ in ScG in terms of the phonological environments in which both occur.

We may conclude that unrounding has occurred more commonly in Irish than in ScG. Unrounding occurs more commonly with //u// than //o// in Irish. In the case of ScG, it is difficult to assess if unrounding has occurred more commonly with //u// or //o//. One gets the impression, however, that unrounding has occurred more commonly with //u// than //o// in ScG. This suggests a possible implicational relation between mid and high vowels with respect to unrounding in both Irish and ScG which may be expressed as mid ⇒ high.

(6) Rounding

Rounding naturally only affects [–round] vowels i.e. //i e a//. Rounding of //i// occurs commonly in Irish and ScG before the sonorants //L l N m//. Rounding of //e// occurs only before certain velars in Irish. Rounding of //a// generally occurs only when preceded by labials in both Irish and ScG. It is debatable whether or not the developments //a// > /e/, /i/ in Irish and //a// > /ɤ/ in ScG involved the intermediate stage of //a// > /o/, which would imply rounding.

Given the uncertainty surrounding the developments //a// > /e/, /i/ in Irish and //a// > /ɤ/ in ScG, we may tentatively suggest that rounding occurs more frequently with //i// than with //a//. Similarly, rounding occurs more commonly with //a// than //e//. This suggests a possible implicational relationship between low, mid and high vowels with respect to rounding which may be expressed as mid ⇒ low ⇒ high.

Implicational relations

The implicational rules (some of them tentative) described above are summarised here:

Implicational rules, variables being vowel height

Raising	low	⇒	mid		
Lowering	high	⇒	mid		
Retraction	low	⇒	high		
Fronting	mid	⇒	high		
Unrounding	mid	⇒	high		
Rounding	mid	⇒	low	⇒	high

Table 8A.4

Table 8.4 provides us with important information with regard to possible implicational relationships between CG low, mid and high vowels. We note that mid vowels are

more likely to change in quality along a vertical axis whereas high vowels are more likely to change colour, and quality along a horizontal axis. Moreover, table 8A.4 suggests that mid vowels are more likely to be raised and lowered than lower and higher vowels respectively. In other words, relatively higher vowels tend to be raised more commonly than relatively lower vowels, and relatively lower vowels tend to be lowered more commonly than relatively higher vowels. Or to put it another way: high vowels become higher, lower vowels become lower. This is reminiscent of the general principle discussed in Donegan (1985: 119) that 'the rich get richer and the poor get poorer': *the vowel which is more susceptible to increase of a given property is the one which already possesses that property to a higher degree*.' Donegan (1985: 137) also notes that

> an ! lower implicational condition on Lowering is to be expected — i.e. that lowering of mid vowels may occur without lowering of high vowels, but that the lowering of high vowels should imply lowering of their mid counterparts — but I cannot substantiate such a condition at this time.

While Donegan's discussion of vowel changes refers on the whole to unconditioned changes, her conclusions do nevertheless seem to apply to the historical development of the CG vowel system.

It is outwith the scope of the present thesis to assess the relevance of these findings to the chronological ordering of the raising and lowering of the CG vowels. Future research may well show, however, that in Gaelic, mid vowels were lowered prior to high vowels and that mid vowels were raised prior to low vowels.

We noted above that high vowels tend more commonly to lose their colour than lower vowels, i.e. high vowels tend to be retracted, fronted, unrounded and rounded more commonly than lower vowels. Retraction and fronting can be seen as mere changes in colour: retraction involves the loss of palatal colour and the acquirement of labiality. Fronting can be seen as the loss of labiality and the acquirement of palatality.[10] Similarly, rounding and unrounding may be seen as addition and elimination of labial colour respectively.

There appears to be an implicational relationship between the depalatalisation and labialisation of vowels in all varieties of Gaelic, leaving aside those dialects which show the minor development //i// > /ɯ/ in ScG. We may express this as

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[10]For the term 'colour' and its significance, see Donegan (1985: 148 ff.).

depalatalisation ⇒ labialisation. Similarly in Irish, there appears to be an implicational relationship between delabialisation and palatalisation, which may be expressed as delabialisation ⇒ palatalisation. The latter relationship does not hold for ScG because of the frequent development of //u// > /ɯ/ and //o// > /ɤ/. These relationships may be summarised as follows:

	depalatalisation ⇒ labialisation	delabialisation ⇒ palatalisation
Irish	+	+
ScG	+	–

Table 8A.5

Retention of CG vowels

We noted preliminarily above that there were certain global conditions on the retention of CG vowels i.e. that non-front vowels are retained before non-palatalised consonants, and non-back vowels are retained before non-velarised consonants. We expressed this as follows:

(A) V[–front] → V[–front] / __ C[–palatalised]
(B) V[–back] → V[–back] / __ C[–velarised]

While this holds true for all CG vowels, in the case of (A), the opposite condition may also apply in ScG, although less regularly, and in a more restricted fashion. In the following, I use the symbol C_X to indicate that this condition applies only to some following consonantal environments:

V[–front] → V[–front] / __ C_X[+palatalised] (ScG)

For instance, the labial vowels //u// and //o// are frequently retained in the prepalatal environment. //u// is frequently retained in ScG before the segments //l' d' n' r' ʃ//. Similarly, //o// is retained as /o/ and /ɔ/ in ScG before the segments //r' l' n' ʃ t'//. In Irish dialects as a whole, //o// is retained frequently before the segments //l' ʃ// and before the groups //rʃ rt'//. In Donegal, where the retention of //o// occurs more commonly, //o// is retained frequently before the segments //l' r' d' t' ʃ//. It is significant that the labialised vowels //u o// are frequently retained before the natural class of palatalised apicals //l' r' n' ʃ t' d'//.[11] The retention of labiality before the palatalised apicals suggests that labiality tended to be lost when followed by non-apical segments which are phonetically more palatal than these, such as //L' N'// etc.

[11]Back labial vowels are retained before //n'// only in ScG dialects?

The effect of preceding consonantal environment

We have noted already that the following consonantal environment is the most significant factor in determining the development of all CG vowels. However, in some cases, the preceding consonant plays an important role, particularly in the retention or addition of the feature of labiality. We have noted that //o// is delabialised to /a/ in the environments f k __ l r s and k, kr, kL __ C', i.e. frequently following the labial //f//, the velar //k// and velarised //L//. The unrounding of //o// in such cases can be seen as a case of dissimilation whereby //o// is delabialised following the labial //f//, the velar //k// and velarised //L//. Original //u// in ScG is frequently retained when preceded by the labials //b f m// and the velar //k//. In Donegal, //u// is frequently retained when preceded by the velar //k//. We may conclude that there is a tendency to retain labialised vowels when preceded by labials and certain velar or velarised segments.

The diachronic development of the front vowels //i e// has been least affected by the preceding consonantal environment. However, when these vowels are preceded by original //R'// which later merged with //R//, this had the effect of lowering the mid vowel //e// to /a/ in some words, e.g. *rech, reg* (FUT of vb 'go') > *rach, ragh*. A preceding //R'// > /R/ also had the effect of retracting //i//, particularly in ScG, e.g. *rig, rith* > *ruig, ruith*.

Effects of developments in consonantal system on the development of vowels

Differences in the domain of some of the developments discussed above in Irish and ScG are to be partially explained by divergent diachronic developments in the consonantal system. We have argued for instance that the lowering of //e// to /a/ originated in sonorant rich environments, including in the position preceding velarised consonants. The universal[12] lowering of //e// to /a/ in southern Irish dialects may have occurred as a result of a fundamental change in distinctive features within the consonant system. In other words, lowering of //e// to /a/ may only have been universally applied once the opposition between all broad and slender consonants came to be based on the feature [+/–velarised].

We have noted a tendency for labialised vowels to be retained before the palatalised apicals //l' r' (n') t' d' ʃ// in Gaelic dialects. We have noted above that back vowels tend to be delabialised when they precede strongly palatalised segments such as //L' N'//. The merger of //L'// and //l'//, and //N'// and //n'// in Munster dialects (discussed in

[12]Except before /g/ in some words e.g. *beag*.

chapter 1) may have caused delabialisation of back vowels to occur before reflexes of original //l' n'// — if we assume that delabialisation occurred preceding the segments //L' N'// prior to the merger of lenited (//l' n'//) and unlenited palatalised sonorants (//L' N'//). Against this, however, delabialisation occurs in Connacht and Donegal dialects where lenited and unlenited palatalised sonorants have not merged.

In the following sub-sections (ii) and (iii), we show that the retention of voiced fricatives, as well as varying from dialect to dialect, depends on two factors: (a) the nature of the preceding vowel, and (b) the following phonological environment i.e. __ C, __ V, __ #.

(ii) __ F[+labial] [+voice]

The retention and vocalisation of labial fricatives in Gaelic is summarised according to phonological environment in the following tables, where + indiates that the relevant labial fricative has been retained, and – indicates that the fricative has been vocalised; ? indicates that there is insufficient evidence to establish whether the relevant labial fricative has been retained or vocalised:

	Munster				
	//a//	//o//	//u//	//i//	//e//
//v// → /v/	–	–	+ (_#)	–	–
//v̴// → /v/	+ (_V) – (_C)	–	–	?	–
//v'// → /v'/	–	–	+ (/_#) – (/_V,C)	+ (/_#) – (_V,C)	–
//v̴'// → /v'/	–	+ (/_#,V)	+ (_V) – (_C)	+(/_#) – (_V,C)	–

Table 8A.6

	Connacht				
	//a//	//o//	//u//	//i//	//e//
//v// → /v/	–	–	+ (_#) – (_V,C)	–	–
//v̴// → /v/	+	–	–	?	+
//v'// → /v'/	+	+	+	+ (_#)	+
//v̴'// → /v'/	+	+	+	+	+

Table 8A.7

Donegal					
	//a//	//o//	//u//	//i//	//e//
//v// → /v/	–	–	–	–	–
//ṽ// → /v/	–	–	–	?	–
//v'// → /v'/	+	+	+	+ (_#)	+
//ṽ'// → /v'/	+	+	+	+	+

Table 8A.8

Majority of ScG dialects					
	//a//	//o//	//u//	//i//	//e//
//v// → /v/	–	–	–	–	–
//ṽ// → /v/	+/– (_#,V) – (_C)	–	–	?	+/– (_V) – (_C)
//v'// → /v'/	?	–	–?	– (_#)	?
//ṽ'// → /v'/	–?	–	–?	?	–?

Table 8A.9

ScG: GK, GA					
	//a//	//o//	//u//	//i//	//e//
//v// → /v/	+?	–	–	–	–
//ṽ// → /v/	+	–	–	?	+
//v'// → /v'/	?	–	–?	+ (_#)	?
//ṽ'// → /v'/	–?	–	–?	?	–?

Table 8A.10

Vocalisation of //v//

Certain general statements about the phonological conditioning factors which affected the vocalisation and retention of labial fricatives can be made based on tables 8A.6-10. We note that //v// is vocalised following all CG short vowel phonemes in all varieties of Gaelic, the only exceptions being (a) //uv// / __ # e.g. *dubh* in Munster and Connacht dialects where /v/ is sometimes retained, and (b) //av// / __ V in the word *labhairt* in GK, GA.[13] Based on the synchronic evidence, we cannot tell whether or not the vocalisation of the labial fricative //v// proceeded in stages conditioned by the prevocalic environment.

Vocalisation of //ṽ//

We note that //ṽ// is vocalised following the labialised vowels //o u// in all varieties of Gaelic.[14] We cannot comment on the vocalisation of //ṽ// following //i// in Gaelic since

[13]The retention of //v// in *labhairt* may be a spelling pronunciation or a high register form. This word occurs frequently in the ScG Bible.

[14]The only exception which I have noted to this is GL *comhfhurtail* /ɔ̃v/, which Borgstrøm (DOH: 208) connects with Old Irish *comfhortacht*, see DIL s.v. However, this word, if it does not derive

the monographs provide no instances of //iṽ// sequences. There is an implicational relationship between the vowels //a// and //e// with respect to both the vocalisation and retention of //ṽ// in both Irish and ScG, which may be expressed as follows:

$$//\tilde{v}// \rightarrow \emptyset \; / \quad //a// \_\_ \Rightarrow //e// \_\_$$
$$//\tilde{v}// \rightarrow /v/ \; / \quad //e// \_\_ \Rightarrow //a// \_\_$$

In other words, if //ṽ// is vocalised following //a//, then it will also be vocalised following //e//. Similarly, if //ṽ// is retained following //e//, then it will also be retained following //a//. This may be illustrated by the following scalograms:

Vocalisation of //ṽ// following variables //a//, //e//			
		amharc (Ir), *gamhain* (ScG)	*sleamhain*
Irish	***ScG***		
Connacht	GL, GA	–	–
Munster (__V)[15]	DOH (Ha), EPG[16]	–	+
Donegal	DOH (Ba), S, R	+	+

Table 8A.11

Vocalisation of //ṽ// following variables //a//, //e//			
		//a// __	//e// __
Irish	***ScG***		
Connacht	GL, GA	–	–
Munster (__V)[17]	DOH (Ha), EPG	–	+
Donegal	DOH (Ba), S, R	+	+

Table 8A.12

Retention of //ṽ// following variables //a//, //e//			
		//a// __	//e// __
Irish	***ScG***		
Connacht	GL, GA	+	+
Munster (__V)[18]	DOH (Ha), EPG	+	–
Donegal	DOH (Ba), S, R	–	–

Table 8A.13

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from English *comfortable*, may well have been influenced by it. If so we can disregard it since /v/ has been reintroduced in a number of phonological environments with the borrowing of English and Scots words such *cabhag* etc.

[15]IWM.

[16]*gamhain* develops in EPG as if it derived from **gabhain*. The labial fricative //ṽ// is, however, retained in *sgamhan, famhar* (EPG).

[17]IWM.

[18]IWM.

It is impossible at the present state of knowledge to know if there is an implicational relationship (a) between the labial vowels //u o//, and (b) between //u o// and //a// and //e// with respect to the retention and vocalisation of //ṽ//. Given the wholesale vocalisation of //ṽ// in Gaelic when preceded by the labialised vowels //u o//, we may tentatively suggest the following implicational relationship //a// ⇒ //e// ⇒ //u o//. This suggests that the vocalisation of //ṽ// may have occurred in stages, beginning (1) when //ṽ// was preceded by the labialised vowels //u o//, spreading to (2) when preceded by the mid vowel //e//, and finally, (3) when preceded by the low vowel //a//. The vocalisation of //v// may have occurred in similar stages, but as we have already noted, this information is at the present state of knowledge irretrievable, based on the synchronic evidence at any rate.

The vocalisation and retention of the labial fricative //ṽ// is to some extent dependent upon the following segmental environment also. In particular, //ṽ// is always vocalised in Irish and in the majority of ScG dialects (except GK, GA) when //ṽ// precedes a consonantal segment. However, //ṽ// may or may not be vocalised when it is followed by a vowel. There is an implicational relationship between the following segmental environments with respect to the vocalisation and retention of //ṽ//, which may be expressed as:

//ṽ// → Ø / __ V ⇒ __ C
//ṽ// → /v/ / __ C ⇒ __ V

This may be illustrated by the following scalogram:

Vocalisation of //ṽ// preceding variables __C, V			
		amharc (Ir), *gamhain* (ScG)	*samhradh*
Irish	***ScG***		
Connacht	GA, GK	–	–
Munster (IWM)	GL, DOH (Ha)	–	+
Donegal	S, R	+	+

Table 8A.14[19]

The implicational relationship between the following consonantal and vocalic environments with respect to the vocalisation (and retention) of //ṽ//, may reflect the diachronic situation. If so, this suggests that //ṽ// may have been vocalised first when it appeared pre-consonantally and subsequently when it occurred intervocalically.

[19]A similar scalogram could be presented for the vocalisation of //ṽ// before the same variables.

Vocalisation of //v' ṽ'//

The palatalised labial fricatives are retained in Connacht and Donegal dialects, except in ICF where //ṽ'// is vocalised preconsonantally when preceded by //u//. In Munster dialects //v'// is retained in word final position only following the high vowels //u i//; otherwise //v'// is vocalised in Munster dialects. In Munster, //ṽ'// is retained in final position following //i o// and intervocalically when preceded by //u//; otherwise //ṽ'// is vocalised, i.e. always when preceded by //a e// etc. Leaving aside cases where //ṽ'// occurs in absolute final position, we see that in Munster, both //v'// and //ṽ'// are vocalised when preceded by //a e i//. //ṽ'// is retained when preceded by the labialised vowels //o u// and when followed by a vowel, e.g. *roimhe, uimhir*. This suggests that the vocalisation of palatalised labial fricatives may have occurred in the first instance when preceded by front //i e//[20] and non-back //a// vowels, and later when preceded by back labialised vowels //o u//. It is not possible to establish any implicational relationships between the short vowels with respect to the vocalisation of the palatalised labial fricatives.[21] There is, however, an implicational relationship between the following consonantal and vocalic environments with respect to the vocalisation and retention of //ṽ'// (in Irish), as described for the vocalisation and retention of broad //ṽ//.[22] This may be expressed as:

$$//\tilde{v}'// \rightarrow \emptyset \; / \quad \_\_ \; V \Rightarrow \_\_ \; C$$
$$//\tilde{v}'// \rightarrow /v'/ \; / \quad \_\_ \; C \Rightarrow \_\_ \; V$$

This may be illustrated by the following scalogram:

	Vocalisation of //ṽ'// preceding variables __C, V	
	uimhir	*cuimhne*
Munster	–	+
Connacht, Donegal	–	–

Table 8A.15

This implicational relationship (cf. table 8.13) may reflect the diachronic situation, and if so, suggests that //ṽ'// may have been vocalised first when followed by a consonantal segment, and subsequently when followed by a vocalic segment. The evidence from

[20]Except when word final //v'// was preceded by //i// in which case the labial fricative is retained e.g. *sibh*.

[21]This is partly due to the fact that //Vv'// sequences are not well attested in our sources.

[22]There is insufficient evidence to establish this for ScG and also for //v'// in Irish, though I suspect that the same holds true in this case also.

the ScG monographs is too fragmentary to allow us to make detailed comments on the development of //v' ṽ'//. However, vocalisation appears to be more common in ScG than in Irish.

We may summarise that for the retention of the labial fricatives //v(') ṽ(')//, there is an implicational relationship between the following segmental environments which may be expressed as follows: __ C ⇒ __ V (⇒ __ #?).[23] We also noted that labial fricatives tended to be retained more frequently following vowels of opposing front and/or back quality. This latter observation may be described summarily as:

$$\begin{array}{lcll} \text{F}[+\text{labial}] & \rightarrow & \text{F}[+\text{labial}] & / \text{ V}[-\alpha\text{back}] \_\_ \\ [+\text{voice}] & & [+\text{voice}] & \\ [\alpha\text{back}] & & [\alpha\text{back}] & \end{array}$$

As a corollary, we may summarise further that labial fricatives tend to be vocalised in environments which share similar features. In particular, (1) labial fricatives lose their consonantal quality in the most consonantal environments (i.e. preconsonantally) and (2) labial fricatives lose their front/back articulation in the most front/back (respectively) environments i.e. following front/back vowels respectively. This can be seen as both an assimilative and dissimilative process. It is assimilative in that labial fricatives become vocalic following vowels sharing similar features of front/back. It is dissimilative in that labial fricatives are vocalised before consonantal segments having opposing qualities of front/back.[24]

The final point to be made with regard to the vocalisation of the labial fricatives is that there is an implicational relationship between the vocalisation of non-nasal //v(')// and nasalised //ṽ(')//, which may be expressed as follows:

$$//\tilde{v}(')// \Rightarrow //v(')//$$

In other words, the vocalisation of the nasalised labial fricatives implies the vocalisation of the non-nasal labial fricatives.

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[23]There is insufficient evidence at our disposal to be certain about the inclusion of the environment __ #.

[24]Vocalisation before consonantal segments may also be seen as an instance of cluster simplification with compensatory lengthening of the vowel preceding the fricative.

Vocalic developments in the environment __ F[+voice][+labial]

In the following, diphthongisation and lengthening of the short vowels, when a following labial fricative is vocalised, are compared and contrasted. We are only concerned here with words where the labial fricative occurs prevocalically and preconsonantally i.e. not in word final position. As we have seen in earlier chapters, there are two developments: diphthongisation (DP) and lengthening (LN). In the following tables, the symbol – indicates that neither DP nor LN takes place; in effect this means that the relevant labial fricative has been retained. The various outcomes of //VF//, illustrated in the following tables, refer to both environments __ C and __ V unless otherwise stated.

Munster					
	//a//	//o//	//u//	//i//	//e//
__ v bh	DP	DP	LN	LN	DP
__ ṽ mh	DP	LN	LN	?	DP
__ v' bh	DP	DP	LN	?	DP
__ ṽ' mh	DP	–	– (_V) LN (_C)	LN	LN

Table 8A.16

Connacht[25]					
	//a//	//o//	//u//	//i//	//e//
__ v bh	DP	DP	LN	LN	DP
__ ṽ mh	–	LN	LN	?	–
__ v' bh	–	–	–	?	–
__ ṽ' mh	–	–	–	–	–

Table 8A.17

Donegal					
	//a//	//o//	//u//	//i//	//e//
__ v bh	LN,DP (_V) DP (_C)	LN	LN	LN	LN,DP (_V) DP (_C)
__ ṽ mh	DP	LN	LN	?	DP
__ v' bh	–	–	–	?	–
__ ṽ' mh	–	–	–	–	–

Table 8A.18

[25]Leaving aside ICF.

Majority of ScG dialects					
	//a//	//o//	//u//	//i//	//e//
__ v bh	–, DP (_V)[26] DP, LN (_C)	–, DP (_V) ? (_C)	– (_V) LN (_C)	– (_V) ? (_C)	–, DP (_V)[27] LN (_C)
__ ṽ mh	–, DP (_V) DP (_C)	– (_V)[28] LN (_C)	– (_V) ? (_C)	?	–, DP (_V) DP (_C)
__ v' bh	? (_V) DP (_C)	? (_V) DP (_C)	? (_V) DP (_C)[29]	? (_V) LN, (DP) (_C)	?
__ ṽ' mh	? (_V) DP (_C)	–, DP (_V) DP (_C)	? (_V) DP (_C)	? (_V) LN, (DP) (_C)	–, DP (_V)?

Table 8A.19

GK, GA					
	//a//	//o//	//u//	//i//	//e//
__ v bh	–	– (_V) ? (_C)	– (_V) ? (-C)	– (_V) ? (_C)	– (_V) LN (_C)
__ ṽ mh	–	– (_V) LN (_C)	– (_V)	?	– (_V,C)
__ v' bh	?	? (_V) DP (_C)	– (_V) –, DP (_C)	– (_V)	?
__ ṽ' mh	DP	– (_V) DP (_C)	– (_V) –, DP (_C)	– (_V)	DP (_V)?

Table 8A.20

__ v

Tables 8.16-20 enable us to make some general comments about the impact which the vocalisation of the labials had on the CG short vowel system. We note that the high vowels //u i// are never diphthongised when preceded by the labial fricative //v// in all varieties of Gaelic: in Irish, lengthening is the norm, whereas retention of short vowels is the norm in ScG although lengthening does occur, especially when //v// occurs preconsonantally. In Munster and Connacht, diphthongisation is the norm for a preceding //a e o//, both when //v// occurs preconsonantally and prevocalically. However, in Donegal only lengthening occurs in the case of //o//, whereas both diphthongisation and lengthening occur in the case of //a e//.[30] This is illustrated in the following tables:

[26]Lengthening also before V in ESG.
[27]But also lengthening in ESG.
[28]But diphthongisation in EPG.
[29]But lengthening also in EPG.
[30]Both lengthening and diphthongisation occur in the case of //a e// when //v// occurs prevocalically but only dipthongisation occurs in the case of //a e// when //v// occurs preconsonantally.

Diphthongisation and lengthening of CG short vowels when followed by //vV//			
	//a e//	//o//	//u i//
Munster	DP	DP	LN
Connacht	DP	DP	LN
Donegal	LN, DP	LN	LN

Table 8A.21

Diphthongisation and lengthening of CG short vowels when followed by //vC// in Irish			
	//a e//	//o//	//u i//
Munster	DP	DP	LN
Connacht	DP	DP	LN
Donegal	DP	LN	LN

Table 8A.22

Table 8.21 suggests that there are implicational relationships between //a e//, //o// and //u// with respect to lengthening and diphthongisation of these vowels when followed by prevocalic //v//. These may be expressed as:

$//V_xvV// \rightarrow /V_x:/$ $\quad /V_x/ = //a\ e// \Rightarrow //o// \Rightarrow //u\ i//$ (LN)
$//V_xvV// \rightarrow /VV/$ $\quad /V_x/ = //o// \Rightarrow //a\ e//$ (DP)

In other words, if //a e// are lengthened when followed by //v//, then //o// will also be lengthened. If //o// is lengthened, then //i u// will also be lengthened. Similarly, if diphthongisation occurs in the sequence //ov//, then diphthongisation occurs also in the sequences //av ev//. If these relationships reflect the diachronic situation, it suggests that lengthening (or perhaps monophthongisation of a diphthong in the case of //o//) occurred first in reflexes of //iv uv//, and subsequently in reflexes of //ov// in Donegal dialects. Similarly, diphthongisation may have occurred first in the sequences //av ev// and subsequently in //ov// sequences.

We have argued in earlier chapters in the case of Donegal //a e// that diphthongisation is likely to have been the original development of //av ev// sequences (both prevocalically and preconsonantally), but that the subsequent coalescence of syllables led to monophthongisation when the second syllable contained /ə/. While there is no synchronic evidence for diphthongisation of //o// in //ov// sequences in the Donegal monographs, we cannot be certain whether or not lengthening is the original development or the result of the monophthongisation of an original diphthong. If diphthongisation did occur in Donegal in the case of //o//, as well as //a e//, then we can state that the vocalisation of //v// had the same effect on all individual vowels in

all Irish dialects i.e. diphthongisation of all non-high vowels and lengthening of all high vowels.

The non-high vowels //a o e// pattern differently in ScG to Irish. Whereas in Irish //a e// show the same pattern of development, it is //a o// in ScG which pattern in the same way as the following table illustrates:

Retention, diphthongisation and lengthening of //a o e// before //vV// in ScG			
	//a// *gabhar, sabhall*	//o// *gobha*	//e// *leabhar*
GL	–	–	–
DOH (Ba)	–	–	DP
R, EPG	DP	DP	DP
ESG (E)	DP	DP	LN
ESG (B, G)	DP	LN	LN[31]

Table 8A.23

Table 8.23 suggests that there is an implicational relationship between //o// and //a// with respect to diphthongisation before //vV// in ScG. This may be expressed as:

$$//V_xv// \rightarrow VV \,/\, \_\_\, V \qquad //V_x// = //o// \Rightarrow //a//$$

In other words, if diphthongisation occurs in reflexes of //ovV//, then diphthongisation will also occur in reflexes of //avV//. There is no implicational relationship between //o// and //e// with respect to diphthongisation before //vV// in ScG. There does, however, appear to be an implicational relationship between //o// and //e// with respect to lengthening before //vV// in ScG which may be expressed as:

$$//V_xv// \rightarrow /V_x:/ \,/\, \_\_V \qquad //V_x// = //o// \Rightarrow //e//$$

In other words, if lengthening occurs in reflexes of //ov//, then lengthening will also occur in reflexes of //ev//.

It is not clear whether or not lengthening in ESG represents (a) the original development or (b) a monophthongisation of an original upgliding diphthong. If the latter, then we can state that diphthongisation was the most common development of the non-high vowels //a o e// in ScG as a result of the vocalisation of //v//.[32]

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[31]*Leabhar* /o:/ is only attested once in ESG: 126. In the absence of further evidence, we must assume that /o:/ occurs in all dialects E, B, G.

[32]Recall that we have argued that instances of //av ev ov// > /o(:)/, /ɔ(:)/ in ScG may have derived from *u*-gliding diphthongs.

We conclude that for all Gaelic dialects, following the vocalisation of //v//, the original development of the high vowels //i u// was lengthening, whereas the original development of the non-high vowels //a o e// was diphthongisation. We have argued above that long monophthongs occur as the reflexes of //av ov ev// in Gaelic dialects only when (a) disyllables have been reduced to monosyllables (Donegal, ESG) and (b) when //v// occurred preconsonantally.

It is more difficult to assess the relationship between the retention, diphthongisation and lengthening of //a o e// before //vC// in ScG because reflexes of CG //avC evC// occur only rarely in the monographs. For instance, I have noted no instances of //ovC// at all. The available evidence, presented in table 8.24, merely corroborates that //a// and //e// pattern in the same way in the dialects of GL and EPG when followed (a) by //vV// and (b) by //vC//:

Retention, diphthongisation and lengthening of //a o e// before //vC// in ScG			
	//o//	//a// *sabhlaichean, slabhraidh*	//e// *leabhraichean*
GL	?	LN	LN
EPG	?	DP	DP
GK	?	?	LN
ESG	?	DP/L	?
DOH, SR, GA	?	?	?

Table 8A.24

__ ṽ

We have noted that lengthening is the normal development for the high vowel //u// when a following nasalised //ṽ// is vocalised. We note also in all varieties of Gaelic that when nasalised //ṽ// is vocalised, (a) a preceding //a e// is never lengthened and (b) a preceding //o u// is never diphthongised. When nasalised //ṽ// is vocalised in Irish, it has the same effect on individual preceding vowels in all dialects: diphthongisation occurs in the case of a preceding //a e//, lengthening with //o u//. When nasalised //ṽ// is vocalised in ScG, short vowels are retained or lengthened in the case of a preceding //o u//; in the case of a preceding //a e//, short vowels are retained or diphthongised.[33] It is not clear if lengthening of //o// in such cases in Irish and ScG involved an intermediate stage of diphthongisation. If it did, then we may conclude that as a result of the vocalisation of nasalised //ṽ//, lengthening is the normal development for the high vowels //i u// and diphthongisation for the mid

[33]Diphthongisation only when //ṽ// is preconsonantal.

and low vowels //a o e//. However, since diphthongisation is not generally attested in reflexes of //oṽ// sequences, it must remain a possibility that diphthongisation did not occur in //oṽ// sequences. It is quite likely that //o// had high allophones in the position before nasalised //ṽ//. We have noted that high vowels //u i?// are lengthened as a result of the vocalisation of //ṽ//. It is possible that higher allophones of //o// were, like //u//, lengthened rather than diphthongised as a result of the vocalisation of //ṽ//.

__ v', ṽ'

Short vowels are generally retained before //v' ṽ'// in Connacht and Donegal dialects. In Munster dialects, lengthening is the norm when //v' ṽ'// are preceded by the high vowels //i u//, although a short vowel is retained in reflexes of //uṽ'V// e.g. *uimhir*.[34] In Munster, diphthongisation is the normal reflex of reflexes of the non-high vowels //a o e// before //v' ṽ'//.[35] In ScG *i*-gliding diphthongs are by far the most common reflexes of all CG short vowels, except //i//, before the palatalised labials //v' ṽ'//. Only lengthening occurs in reflexes of //iv'C iṽ'C//. The fact that in Munster dialects, //ṽ'// is vocalised in *n(e)imhe* /i:/ but not in *uimhir* /iv'/ may imply that //ṽ'// was vocalised following //i// prior to the fronting of //u// to /i/ before //ṽ'//. This provides the following chronological ordering for Munster Irish dialects:

(1) //ṽ'// → Ø / //i// __
(2) //u// → /i/ / __ ṽ'

Finally, we have noted a tendency for reassignment of nasality to occur in words containing one or more nasal segments, particularly in words containing original nasalised labial fricatives. Such reassignments involve both extensions of, and reductions in, the feature of nasality. Reductions in the nasality of a particular consonant occur frequently in words containing two nasal consonantal segments, one of which is the labial fricative *mh*. This process, particularly noticeable in words containing the mid vowels //e o//, explains the synchronic realisation of the following words: *domhan* (Ir, ScG), *domhain* (Ir, ScG), *deimhin* (Ir), *deamhan* (Ir).[36] Extension of nasality in words containing at least one nasal consonantal segment occurs in the case of *abhainn* (ScG). Extension of nasality may also occur across word boundaries, as we have suggested in the case of *claidheamh* which may have originated in the

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[34]This is the only example which I have noted in Munster dialects of a //uṽ'V// sequence. The retention of //ṽ'// may in this case represent a literary pronunciation or a high register form.
[35]Leaving aside instances where //e// was raised to /i/ before the vocalisation of //ṽ'// e.g. *neimh* > *nimh*.
[36]The loss of nasality of *mh* in such words depends largely on dialect.

phrase *claidheabh mór*. The phrasal spread of nasality also explains nasality in the vowels of *oidhche* (Ir, ScG) and *faic* (vb) (ScG), presumably originating in the phrases *an oidhche* (N, D sg), *an/chan fhaic* (vb) respectively.[37] For other instances of the extension of nasality in Gaelic, see Hamp (1956, 1969, 1986, 1990), Ó Maolalaigh (1997).

(iii) __ F[+voice] [+dental]\[+velar]

We have noted in chapter 1 that the dental and velar fricatives merged for the most part in all Gaelic dialects. In the following, we will refer to the velar fricatives /ɣ(')/ which represent reflexes of both //ɣ(')// and //ð(')//. In stressed syllables, the velar fricatives have been more often vocalised than retained in both varieties of Gaelic, although they are retained more frequently in ScG than in Irish dialects. It makes more sense therefore to consider the environments in which the velar fricatives /ɣ(')/ have been retained rather than vocalised. The palato-velar fricative /ɣ'/ has nowhere survived as a true fricative word internally. The velar fricative, however, survives to varying degrees depending on dialect, and to a certain extent also on phonological environment. Its retention is also lexically conditioned as the following examples from GL illustrate: /ɣ/ *feadhain, teadhair* but /Ø/ *leaghadh, deaghaidh*. Indeed, the retention of the velar fricative in stressed (and unstressed) syllables constitutes one of the major phonological differences between Irish and ScG. Furthermore, the retention of the velar fricative depends to a large extent also on the nature of the preceding vowel, a point which has hitherto gone unnoticed. The degree to which /ɣ/ has been retained in the modern dialects is illustrated in the following table:

	The retention of /ɣ/ in Irish[38]				
	//a//	//o//	//u//	//i//	//e//
__ #	–	–	–	+	+
__ V	–	–	–	+	+
__ C	+	–	–	–	+

Table 8A.25

[37]The nasality in the stressed vowel of (ScG) *abhainn* may also be explained in this way, e.g. in the phrase *an abhainn*.

[38]*fliodh, fiogharaiocht, feadh, meadhair, feadhnóg, teaghlach, adhraim*, all from Donegal. An epenthetic /ə/ has developed following /ɣ/ in *teaghlach, adhraim* (DD), cf. map 11.

The retention of /ɣ/ in ScG[39]					
	//a//	//o//	//u//	//i//	//e//
__ #	+	(+)	(+)[40]	+	+
__ V	(+)[41]	_[42]	(+)[43]	(+)[44]	(+)
__ C	–	–	–	–	–

Table 8A.26

Leaving aside the fact that retention of the velar fricative is more common in ScG than in Irish, some interesting patterns emerge. Retention of /ɣ/ preconsonantally is not attested in our monograph sources for ScG, although some instances are attested in Donegal dialects. It is interesting to note that an epenthetic vowel has developed in such instances e.g. *teaghlach, adhraim* (DD); although it is not clear if such vowels are phonemically significant or merely glides. The fricative is retained in absolute final position more commonly in ScG than in Irish. These last two facts may imply that the process of vocalisation operated differently in Irish and ScG. In particular, in ScG the velar fricative may have been lost first in the preconsonantal position, whereas in Donegal it may have been lost first in absolute final position. However, these implications may be misleading and may reflect more the defective nature of our sources rather than true diachronic reality. The retention of /ɣ/ occurs less commonly following the labialised vowels //u o// and more frequently following the front vowels //i e// (and //a// in ScG) in both Irish and ScG. The only examples noted following //o u// are *modh, crodh* and *ugh, lugha*. We may describe the preferred retention of /ɣ/ following the labialised vowels as follows:

$$/ɣ/ \rightarrow /ɣ/ \; / \; V[-back] \_\_$$

Although there is insufficient evidence to prove it from any individual dialect, the patterns revealed by tables 8.25-6 above imply that there may be an implicational relationship between the environments __#, __V, __ C with respect to the

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[39]*lagh* (GL, R), *cladh* (DOH, R, GK), *dragh* (DOH), *agh* (S), *aghaidh* (EPG), *draghail* (EPG); *crodh* (DOH, S), *modh* (DOH); *ugh* (Ba), *lugha* (Ness, Lewis); *fiodh* (GL, DOH, S, R, GK), *frioghan* (GL), *Giogha* (GK), *fiodhan* (EPG); *feadh* (GL, DOH), *seadh* (GL, DOH, R, GK), *feadhain* (GL, R), *teadhair* (GL).

[40]One old speaker in Barra retained /ɣ/ in *ugh* 'egg', DOH: 157. She also had final /ɣ/ in *an-diugh*, though the final /ɣ/ is ahistorical in this word.

[41]Examples noted only from EPG e.g. *draghail*. It is interesting to note that in EPG /ɣ/ is retained intervocalically in the bimorphemic forms e.g. *dragh + ail* but that /ɣ/ is vocalised in in monomorphemic *dragh*. Cf. *fiodh + an* below.

[42]I exclude EPG *foghmhar* /ɤɣ/ since this is likely to derive from an intermediate *faghmhar*.

[43]Noted only in Ness, Lewis (DOH: 209).

[44]Noted only in EPG *fiodhan*, a derivative of *fiodh*.

vocalisation and retention of /ɣ/ (especially when preceded by //i e//). This may be expressed as:

//ɣ// → /ɣ/ / __ C ⇒ __ V ⇒ __ # (ScG, perhaps also Irish?)

In other words, if /ɣ/ is retained preconsonantally, then it will also be retained prevocalically and in final absolute position. Also if /ɣ/ is retained prevocalically then it will also be retained in final absolute position. Donegal *adhraim* (DD) is the only instance of a retained /ɣ/ which I have noted in the Irish monographs following //a//. Since I have noted no instances of /ɣ/ retained following //a// in the positions __ V, __ #, this would seem to argue against the implicational relationship just outlined for the vowel //a// in DD Irish. However, this may be due to a deficiency in the sources, as noted earlier. Similarly, the EPG evidence goes against this also, since /ɣ/ is retained intervocalically in *aghaidh, draghail, fiodhan* but lost in word final position e.g. *dragh, fiodh*. However, there is a clear implicational relationship between __ V and __ # in GL, R, and GK for the vowels //i e//, expressed __ V ⇒ __ # as the following table illustrates:

Retention of /ɣ/ following //i e// in ScG			
		//i//	//e//
GL	__ #	fiodh	feadh, seadh
	__ V	frioghan	feadhain, teadhair
R	__ #		seadh
	__ V		feadhain
GK	__ #	fiodh	
		Giogha	

Table 8A.27

In Donegal, we have:

Retention of /ɣ/ following //i e// in Donegal			
		//i//	//e//
DD	__ #	fliodh[45]	sleagh, feadh[46]
	__ V	fiogharaíocht	?
	__ C	–	teaghlach
TY	__ #	fliodh	feadh
	__ V	–	meadhair
	__ C	–	feadhnóg

Table 8A.28

[45] //ɣ// realised as /g/.
[46] //ɣ// realised as /g/.

We conclude that /ɣ/ is likely to have been first vocalised following the labialised vowels //u o//, and later when preceded by the non-back vowels //i e a// — although there is insufficient information at our disposal at present to establish whether or not there is an implicational relationship between the short vowels with respect to the retention and vocalisation of /ɣ/.[47] It is interesting to note that /ɣ/, which may be designated [+back], is most frequently retained following [–back] vowels. We may also surmise from the implicational relationship established, for the vowels //i e// at least, between __ C, __ V, __ #, that /ɣ/ is most likely to have been vocalised first in the preconsonantal position, then in the prevocalic position, and finally in word final position. Further research, based on a wider range of sources than used in the present study, including LASID, will reveal whether or not these observations hold for the vowels //a o u// also.

We have noted that the palato-velar fricative /ɣ'/ is nowhere retained as a true fricative word internally in our sources. However, consonantal glides /j/ have been reported by some scholars for individual dialects and lexemes. The phonetic and phonological interpretation of high front vocoids which occur intervocalically is notoriously difficult. It is not always clear whether the high front vocoid [i] in sequences [Viə] is best interpreted as /i/ or /j/. Irish scholars frequently transcribe the disyllabic sequences found in the likes of *nighe, fighe, suidhe* (IE) as /i:ə/.[48] Such sequences could just as well be interpreted or represented as /ijə/. For this reason, it is difficult to trace with accuracy and reliability the occurrence of /j/ for //ɣ'// in Irish sources. It is interesting to note, however, that disyllabic sequences /i:ə/ have only been reported in Irish monographs as reflexes of //Vɣ'ə// where V = //u i a// (e.g. *suidhe* (IE), *guidhe* (DD), *tuighe* (DD), *nighe* (IE), *fighe* (IE, DD), *Laighin* (DD)), never when V = the mid vowels //e o//.

The same difficulties of interpretation pertain to ScG, although perhaps less so, since disyllabic sequences are more common in ScG. The following table indicates the positions and environments in which /j/ has been reported in the ScG monographs for original //ð'/ɣ'//:

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[47]We suggested in chapter 4, section B that /ɣ/ may have been vocalised following //a// historically earlier than when following //e// in some ScG dialects.

[48]Cf. /iə/ (sic) *fighe, guidhe, tuighe* (DD), /i:ə/ *buidhe* (IR).

	The retention of /j/ in ScG[49]				
	//a//	//o//	//u//	//i//	//e//
__ #	+	(+)[50]	+	–	–
__ V	+	–	+	–	–
__ C	+	–	–	–	–

Table 8A.29

The retention of consonantal /j/ for //ð'/ɣ'// varies from dialect to dialect. It is also lexically conditioned as the following examples from GL illustrate: *laighe* /Lajə/ ~ *aighe* /ɛ-ə/, *buidhe* /bujə/ ~ *bruidhinn* /bruɯ-iN'/. We note that /j/ is never retained following the front vowels //i e//. It occurs most commonly following the non-front vowels //a o u//, but particularly following //u//. It is significant that /j/, which may be designated [+front], is retained most commonly following the [–front] vowels //a o u//.[51] This may be described as follows:

/j/ → /j/ / V[-front] __

There appears to be a, by now familiar, implicational relationship between the environments __ C, __ V and __ # with respect to the retention of /j/ which may be expressed as follows:

/j/ → /j/ / __ C ⇒ __ V ⇒ __ #

In other words, if /j/ is retained preconsonantally, then it will also be retained prevocalically and in absolute final position. Also, if /j/ is retained prevocalically, then it will also be retained in final absolute position.

We may summarise that, for the retention of the fricative /ɣ/ and the consonantal glide /j/ (and perhaps by implication the fricative /ɣ'/), there is an implicational relationship between __ C ⇒ __ V ⇒ __ #. We also noted that these velar segments tended to be retained more frequently following vowels of opposing front and/or back quality. This latter observation may be described summarily as:

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[49]This can be illustrated by *taigh* (GL, DOH, GK), *traigh* (GL, R, GA), *laigh* (GL, GA), *faigh* (GL, GA), *laighe* (GL), *claidheamh* (GL); *saighdear* (GA), *maighdean* (GA); *cnoidh* (EPG); *a-muigh* (GL, DOH, R), *buidhe* (GL, DOH), *suidhe* (GL), *guidhe* (GL, DOH).

[50]In *cnoidh* EPG only.

[51]Similarly, the retention of disyllabic /i:ə/ (=/ijə/??) in reflexes of Irish //að'ɣV//, //uð/ɣ'V// and //ið'ɣ'V// sequences.

$$\begin{array}{lcll} \text{F[+velar]} & \rightarrow & \text{F[+velar]} & / \quad \text{V[}-\alpha\text{back]} \\ \text{[+voice]} & & \text{[+voice]} & \\ \text{[}\alpha\text{back]} & & \text{[}\alpha\text{back]} & \end{array}$$

As a corollary, we may summarise further that velar fricatives tend to be vocalised in environments which share similar features. In particular (1) velar fricatives lose their consonantal quality in the most consonantal environments (i.e. preconsonantally) and (2) velar fricatives lose their front/back articulation in the most front/back (respectively) environments i.e. following front/back vowels respectively. This can be seen as both an assimilative and dissimilative process. It is assimilative in that velar fricatives become vocalic following vowels sharing similar features of front/back. It is dissimilative in that velar fricatives are vocalised before consonantal segments having opposing qualities of front/back.

Vocalic developments in the environment __ F[+velar] [+voice]

We now wish to compare and contrast the developments of the short vowels when a following velar fricative is vocalised. We are only concerned here with words where the labial fricative occurs prevocalically and preconsonantally, i.e. not in word final position. As we have seen there are two developments, namely, diphthongisation (DP) and lengthening (LN). In the following tables, the symbol – indicates that the relevant velar fricative has been retained and neither DP nor LN takes place. The various outcomes of //VF// sequences, illustrated in the following tables, refer to both environments __ C and __ V unless otherwise stated.

Munster					
	//a//	//o//	//u//	//i//	//e//
__ ɣV	DP	DP	LN	LN	DP
__ ɣC	DP (LN)	DP (LN)	LN	LN	DP
__ ɣ'V, C	DP	DP	LN	LN	DP

Table 8A.30

Connacht					
	//a//	//o//	//u//	//i//	//e//
__ ɣV	DP	DP	LN	LN	DP, LN
__ ɣC	LN, DP	LN	LN	LN	DP, LN
__ ɣ'V, C	DP	DP	LN	LN	DP

Table 8A.31

Donegal					
	//a//	//o//	//u//	//i//	//e//
__ ɣV	LN	LN	LN	LN	LN
__ ɣC	LN	LN	LN	LN	LN
__ ɣ'V, C	DP	DP (LN)	LN	LN	LN

Table 8A.32

ScG					
	//a//	//o//	//u//	//i//	//e//
__ ɣV	–	–, DP[52]	–	–	–, DP
__ ɣC	LN	LN	LN[53]	LN[54]	LN, DP
__ ɣ'V	–, DP	–, DP	–, DP[55]	–	–
__ ɣ'C	DP	DP	DP	?	LN[56]

Table 8A.33

__ ɣ

We note that for all Gaelic dialects the vocalisation of /ɣ/ has led to lengthening of the high vowels //i u//. Otherwise, lengthening and diphthongisation occur to different degrees, depending on the dialect and lexeme involved. Where for any individual vowel, both lengthening and diphthongisation occurs, we have argued in earlier chapters that each development is lexically and, moreover, phonologically conditioned. Gaelic dialects align differently in terms of the outcomes in specific phonological environments. For instance, Munster and Connacht have the same outcomes for all short vowels in the environment __ ɣV, namely DP.[57] Similarly, Connacht and Donegal have similar outcomes in the environment __ ɣC (i.e. usually LN), although DP also occurs in Connacht. Donegal and ScG dialects have the same outcomes in the environment __ ɣC i.e always LN. Donegal is quite different from all Irish dialects in having LN in all cases and in all environments, except in the case of //a// before /ɣ'/ and in some cases of //o// before /ɣ'/. We have, however, argued in earlier chapters that long monophthongal reflexes in the case of //a o e// in Donegal are likely to represent secondary monophthongisations of upgliding diphthongs. We have argued for similar monophthongisations in the case of //e o// in ScG. A major

[52]Lengthening also in ESG.
[53]No examples attested in sources, but lengthening occurs regularly in *ughdar* (personal observation).
[54]But diphthongisation only (?) in lexeme *tiodhlaic* (vb).
[55]Lengthening in ESG also.
[56]Only example found is *feum* < *feidhm*.
[57]Although Munster DP ~ Connacht DP, LN in this environment for //e//.

difference between Irish and ScG dialects is that short vowels are, on the whole, retained in the environment __ ɣV in ScG.

There is an implicational relationship between the environments __ɣV and __ ɣC with respect to the lengthening of vowels in Irish dialects which may be expressed as follows:

$$//V// \rightarrow /V:/ \,/ \_\_\ ɣV \Rightarrow \_\_\ ɣC$$

In other words, if a particular vowel is lengthened (as opposed to diphthongised) in the environment __ ɣV, then it will also be lengthened in the environment __ ɣC. This holds for all Irish dialects. I can see no way of inferring implicational relationships between the short vowels with respect to either lengthening or diphthongisation other than the following, which is difficult to substantiate on the evidence of the monographs used for the purposes of this study:

$$//V// \rightarrow /V:/ \,/ \_\_\ ɣC \qquad V = //a// \Rightarrow //o\ e//$$

The difficulty in establishing the validity of this relationship arises because of the complex distribution between DP and LN in the environment __ ɣC in Munster and Connacht dialects.

__ ɣ'

All Gaelic dialects agree in having diphthongs as reflexes of the vowels //a o// in the environment __ ɣ'.[58] Irish dialects agree in having lengthening always as reflexes of the high vowels //i u// before /ɣ'/. Diphthongisation occurs in the case of //e// in Munster and Connacht dialects but lengthening occurs in Donegal, as in ScG.[59] The two developments which significantly differentiate ScG from Irish are (a) the frequent retention of short vowels in the environment __ɣ'V and (b) the development of *i*-gliding diphthongs as reflexes of the high vowel //u// before /ɣ'/.

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[58]In ScG only in __ ɣ'C.

[59]Although *feidhm* > *feum* is the only example I have noted of //eɣ'C// in the ScG monographs.

Summary of developments before fricatives generally

For all fricatives, there appears to be an implicational relationship between the environments __ C and __ V with respect to the retention of fricatives which may be expressed as:

$$\_\_\ C \Rightarrow \_\_\ V$$

We also noted that fricatives tended to be retained more frequently following vowels of opposing front and/or back quality. This latter observation may be described summarily as:

$$F\ [+\text{voice}]\ [\alpha\text{back}] \rightarrow F\ [+\text{voice}]\ [\alpha\text{back}] \quad / V[-\alpha\text{back}]\ \_\_$$

As a corollary, we may summarise further that fricatives tend to be vocalised in environments which share similar features. In particular (1) fricatives lose their consonantal quality in the most consonantal environments (i.e. preconsonantally) and (2) fricatives lose their front/back articulation in the most front/back (respectively) environments, i.e. following front/back vowels respectively. This can be seen as both an assimilative and dissimilative process. It is assimilative in that fricatives become more vocalic (i.e. are vocalised) following vowels sharing similar features of front/back. It is dissimilative in that fricatives are vocalised (made less consonantal) before consonantal segments having opposing qualities of front/back.[60]

(iv) __ SON#\+C[+hom]

Since the development of the CG short vowels is markedly different before the sonorants //L N M[+/–[palatalised]// and before //R// and //rC//, we shall discuss these separately.

There are three main outcomes of CG short vowels before the sonorants //L N M[+/–palatalised]//, namely (a) retention, (b) lengthening and (c) diphthongisation, the occurrence of which depends on various factors including (1) dialect, (2) phonological environment, (3) the vowel in question and (4) to a lesser degree lexical conditioning. Pure lengthening before sonorants can be seen as a mapping of a length feature inherent in the original sonorants

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[60]Cluster simplification may also have been a factor in the vocalisation of fricatives preconsonantally.

//R L N M [+/–palatalised]//. Upgliding diphthongisation before the sonorants can be seen as a development of on-glides which developed as a result of the strong secondary articulations of velarisation and palatalisation inherent in the sonorants.

The development of the CG vowel system before the sonorants may be summarised as follows, where as usual –, DP, LN symbolise retention of short vowel, diphthongisation and lengthening respectively:

	Development of CG short vowels before //L N M// in Irish				
	//a//	//e//	//o//	//i//	//u//
E. Munster	DP	DP	DP	DP	DP
W. Munster	DP	DP	DP / _L DP, LN / _N M	LN	LN
S. Connacht	LN	LN	DP / _L LN, – / _N M	LN, –	LN, –
Connacht	–	–	–	–	–
Donegal	–	–	–	–	–

Table 8A.34

	Development of CG short vowels before //L' N' M'// in Irish				
	//a//	//e//	//o//	//i//	//u//
E. Munster	DP	DP	DP	DP	DP
W. Munster	DP	DP, LN	LN, DP	LN	LN
S. Connacht	LN / _L' DP, – / _N' M'	LN	DP / _L' LN / _N' M'	LN, –	LN, –
Connacht	–	–	–	–	–
Donegal	–	–	–	–	–

Table 8A.35

	Development of CG short vowels before //L N M// in ScG				
	//a//	//e//	//o//	//i//	//u//
Lewis	DP	DP	DP	DP	DP
Central[61]	DP	DP	DP	LN[62]	LN
GK, GA	–, (LN / _M)[63]	–	–, (LN / _M)[64]	LN, –	–
EPG	–	–	–	–	–

Table 8A.36

[61]This includes DOH, S, R and also ESG.
[62]But also diphthongisation in ESG.
[63]GK in some words.
[64]GK some words.

	Development of CG short vowels before //L' N' M'// in ScG				
	//a//	//e//	//o//	//i//	//u//
Lewis	DP	DP	DP	DP / _L' N' LN / _M'	DP
Central[65]	DP	DP, LN	DP	LN	DP (LN)[66]
GK, GA	–	–, (LN / _N')	–	–, LN[67]	–, LN
EPG	–	–	DP / _L' N'	–	–, (DP / _M')

Table 8A.37

Tables 8.34-7 above enable us to make some general observations about the development of the CG short vowels before the sonorants //L N M[+/–palatalised]//. Diphthongisation but not lengthening occurs in the 'peripheral' dialects of East Munster (IR) and Lewis (GL). The similar, though independent, developments of the CG vowels before the sonorants //L N M// has been long recognised, see O'Rahilly (IDPP: 49-52). Southern Connacht dialects come quite close to having only lengthening before the sonorants //L N M//. Otherwise, where short vowels are not retained, both lengthening and diphthongisation are to be found in Gaelic dialects. Leaving aside the 'peripheral' dialects of IR and GL and conservative dialects where short vowels are retained,[68] lengthening is the normal development of the high vowels //i u// in both Irish and ScG dialects, with the exception of ScG //u// before palatalised //L' N' M'// where diphthongisation is the most common outcome. In innovative dialects, diphthongisation is the normal development of the non-high vowels //a o e// in Gaelic dialects generally.[69] We note also that the development of individual vowels differs in some cases when they occur before the non-nasal sonorants //L L'// and the nasal sonorants //N N' M M'//. In most cases, we find that a divergent development occurs preceding one or both of the nasals e.g. (1) both lengthening and diphthongisation occur before the nasals //N M// in the case of //o// in West Munster (IWM), (2) lengthening occurs before //N M N' M'// in the case of //o// in southern Connacht (ICF), (3) In GK where retention is the norm before sonorants, we frequently find lengthening of //a o// before //M N'//. Against this, we note that in the case of //a// in ICF, the divergent development of lengthening occurs before //L'//, not with the nasals //N' M'//.

[65]This includes DOH, S, R and also ESG.
[66]ESG only.
[67]GK in some words.
[68]See map 17.
[69]Southern Connacht is an exception in that lengthening frequently occurs with //a o e// although diphthongisation is also attested in certain environments, see tables 8A.34-5 above.

We observe also that a general implicational relationship exists between low, mid and high vowels with respect to lengthening before the sonorants. This may be expressed as follows:

$$//V// \rightarrow /V:/ \; / \_\_ \; SON \; / \; V = low \Rightarrow mid \Rightarrow high$$

In other words, if low vowels are lengthened before sonorants, then mid vowels and high vowels will also be lengthened. Similarly, if mid vowels are lengthened before sonorants, then high vowels will be lengthened also. By a general implicational relationship, I mean that the implication is not absolutely or exclusively applicable to all lexical items, but that it does apply generally to certain, but not necessarily all reflexes, of the vowels in question. For instance, lengthening of //a// occurs in ICF, always with //e i u// but in the case of //o//, both lengthening and diphthongisation occur. Similarly, lengthening occurs before //L'// in southern Connacht (ICF), always before //e//, frequently before // i u// but both lengthening and diphthongisation occur in the case of //o//.[70] In central ScG dialects, lengthening is attested with the mid vowel //e// and with the high vowel //i// but not with //o// and //u// before palatalised //L' N' M'//. It is not possible, based on our sources alone, to establish whether or not there is an implicational relationship between the various sonorants (including both velarised and palatalised) with respect to lengthening and diphthongisation of CG short vowels. However, the evidence of GK and EPG seem to suggest that lengthening is most likely to occur in the first instance before the nasal sonorants, to judge by the occasional lengthening of //e//, //o// and //u// before //N' M'// especially. The relatively more common occurrence of lengthening in the case //i u// in GK, an otherwise conservative dialect with respect to lengthening before sonorants, suggests that lengthening is most likely to occur with high vowels rather than with other vowels. This latter suggestion is not incompatible with the immediately previous suggestion since vowels tend to be higher before nasals.[71] These suggestions, when considered together also correlate with the implicational relationship described above which implies that lengthening rather than diphthongisation occurs most commonly in the case of the high vowels:

$$//V// \rightarrow /V:/ \; / \_\_ \; SON \; / \; V = low \Rightarrow mid \Rightarrow high$$

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[70]In this case we cannot talk of an implicational relationship between the vowels according to a mini-phonological environment such as __ L' since lengthening occurs before //L'// in the case of //a// but diphthongisation occurs in the case of //o//.

[71]Indeed in many cases where lengthening occurs before the nasal sonorants, raising of mid vowels especially is a prerequisite for the process of lengthening in order to explain the vocalic outcome e.g. *teinn* > *tinn* //i:// (generally in Gaelic).

This implicational relationship reveals a pattern which is the converse of *the rich get richer* principle discussed earlier in this chapter. In the matter of lengthening before sonorants, the least sonorant vowels become more sonorant by being lengthened.

In conservative dialects, there is an apparently lexically conditioned tendency for lengthening of //a// to occur, particularly before //L// e.g. in north Connacht and Donegal dialects.[72]

Lengthening before *r*-sounds

The development of CG short vowels before //R// and //rC// groups is summarised in the following tables:

	Munster				
	//a//	//o//	//u//	//i//	//e//
__ R	LN	?	?	?	LN
__ rC[+voice]	LN	LN	LN[73]	?	LN
__ rC[–voice]	[LN]	[LN]	–	?	–

Table 8.38

	S. Connacht (ICF)				
	//a//	//o//	//u//	//i//	//e//
__ R	LN	DP	?	?	LN
__ rC[+voice]	LN	DP (LN)	LN[74]	?	LN, DP[75]
__ rC[–voice]	[LN]	–	?	?	–

Table 8A.39

	Connacht				
	//a//	//o//	//u//	//i//	//e//
__ R	LN	–	?	?	LN
__ rC[+voice]	LN	–	–	?	LN, –[76]
__ rC[–voice]	[LN]	[LN]	–	?	–

Table 8A.40

[72]It occurs frequently in the set of directional adverbs *thall, anall* etc.
[73]But diphthongisation in IR in *urlár*.
[74]Diphthongisation in *urlár* but this is likely to derive from /o/. Cf. the normal reflex of //au// in ICF is /o/.
[75]Lengthening / __ C e.g. *bearna* but diphthongisation before / __ C' e.g. *ceird*.
[76]Lengthening in *bearna, ceardcha* but retention of short vowel in *ceird*.

	Donegal				
	//a//	//o//	//u//	//i//	//e//
__ R	LN	–	?	?	LN
__ rC[+voice]	LN	LN	–	?	LN
__ rC[–voice]	[LN]	[LN]	–	?	–

Table 8A.41

	ScG				
	//a//	//o//	//u//	//i//	//e//
__ R	LN	LN	?	?	LN
__ rC[+voice]	LN	LN	LN[77]	?	LN[78]
__ rC[–voice]	–?[79]	[LN]	–[80]	?	–

Table 8A.42

We note that where short vowels are not retained, lengthening is the norm, although diphthongisation is attested in some dialects.[81] The high front vowel is excluded from our discussion since we have traced no instances of //i// before original //R// or //rC// groups. All Gaelic dialects lengthen original //a e// before //R// and //rC[+voice]// groups.[82] In cases, where before broad consonants, the outcome of the lengthening if //a e// is the same, it may be implied that //e// was lowered before lengthening occurred:

(1) //e// → /a/ / __ //R//, //rC[+voice]//
(2) /a/ → /a:/ / __ //R//, //rC[+voice]//

Lengthening of the labialsed vowels //u o// is not universal and is uncommon in Connacht and Donegal dialects.[83] Lengthening before rC[–voice] does not occur in the case of the vowels //u e i?//.[84] Where lengthening does, however, occur before rC[–voice], it is in all dialects lexically conditioned. Compare for example: (Munster) /a:/ *arsa, tairseach, thairsi* ~ /a/ *fairsing*, (*tart*);[85] (Connacht) /o:/ *doirt, dortadh* ~ /o/ *gort, goirt*; (Donegal) /ɔ:/ *doirt, dortadh* ~ /ɔ:/ *gort, goirt, gortaghadh*.

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[77]But GK /u/ *urnaighe*; GA /u/ *duirne* ~ GA /u:/ *buird*.
[78]But EPG /a/ *fearna* ~ /a:/ *ceard*.
[79]Note /a/ *parrthas*, PDSG.
[80]But /u:/ *tuirseach* in some dialects, not in EPG /u/, but see discussion of *tuirseach* in chapter 5.
[81]Diphthongisation occurs only in the case of the mid vowels //o// (*bord, orlár*) and //e// (*ceird*) in ICF. Diphthongisation, though not attested in our sources, is attested in some ScG dialects. For instance *u*-gliding diphthongs occur in *ard* /au/ (Lower Spey, Laggan and West Perth), and in *ceardach, ceart, meirleach* in Rannoch and Tummel, see Dilworth (1995/96) for details.
[82]Leaving aside diphthongisation in ICF *ceird*.
[83]For a description of lengthening before rC[+voice] groups, see map 18.
[84]Leaving aside some reflexes of ScG *tuirseach* < //o// whose long /u:/ may in fact be an analogical development rather than a phonetic/phonological development.
[85]Not attested in IWM but is attested in IR.

There appears to be an implicational relationship between the high, mid and low vowels with espect to lengthening before *r*-sounds in all Gaelic dialects which may be expressed as:

$$//V// \rightarrow /V:/ (/VV/) / \_\_ R, rC[+voice] , V = high \Rightarrow mid \Rightarrow low \quad (A)$$

In other words if //u// is lengthened before //R//, //rC[+voice]//, then //o e// and //a// will also be lengthened in similar environments. This also seems to hold true for the environment __ r[–voice] in Irish dialects, but not generally for ScG dialects since lengthening occurs in the case of //o// (e.g. *doirt*) but not generally in the case of //a//. I have excluded the environment __ rC[–voice] in the above implicational rule on the grounds that lengthening in this environment is lexically conditioned.

There may also be an implicational relationship between the various following consonantal environments for lengthening before *r*-sounds. This may be expressed as:

$$//V// \rightarrow /V:/ (/VV/) / \_\_ rC[-voice] \Rightarrow \_\_ rC[+voice] \Rightarrow \_\_ R \quad (B)$$

This works for all Gaelic dialects except Donegal and Connacht in the case of the mid back vowel //o//, which seems to have a different implicational order between the following consonantal environments, which may be expressed as follows:

$$//o// \rightarrow /o:/ / \_\_ rC[+voice] \Rightarrow \_\_ rC[-voice]$$

This converse relationship does not hold for ScG as can be seen from the fact that //a e// are lengthened before //R, rC[+voice]// but not before //rC[–voice]//. Leaving aside the converse implicational relationship in the case of //o// in northern Irish dialects, we note that lengthening of short vowels in the majority of Gaelic dialects is more likely to occur before //R// than //rC[+voice]// and that lengthening is more likely to occur before //rC[+voice]// than before //rC[–voice]//. This means that lengthening is more likely to occur before the most sonorant *r*-sounds (i.e. before //R// prior to //rC[+voice]//, before //rC[+voice]// prior to //rC[–voice]//). Considering implicational rules (A) and (B) together, we may summarise that the most sonorant vowels are most likely to lengthen before the most sonorant following *r*-sounds. This is reminiscent of the general principle discussed in Donegan (1985: 119) and referred to above that 'the rich get richer and the poor get poorer': '*the vowel which is more susceptible to increase of a given property is the one which already possesses that property to a higher degree*.' If we can assume that the implicational rules discussed above reflect the diachronic situation, this suggests that the low vowel //a// was the

first vowel to be lengthened before *r*-sounds in Gaelic and that the most likely environment in which this lengthening first occurred was before //R//. Further research may reveal what, if any, the implicational relationship may have been between the mid vowels //e o//.

General observations about compensatory lengthening of CG short vowels

When CG short vowels are compensatorily lengthened, whether as a result of the vocalisation of fricatives or the shortening of originally long/tense sonorants (excluding before *r*-sounds), we have noted a general tendency for the high vowels //i u// to be lengthened, and the low and mid vowels //a o e// to be diphthongised. In many cases, but by no means all, where the synchronic reflexes of compensatorily lengthened //a e o// are long monophthongs, such monophthongs are frequently to be explained as monophthongisations of upgliding diphthongs (except when these vowels occurred before *r*-sounds). The development of the short vowels before *r*-sounds has been markedly different than before other sonorants and before fricatives. The main differences are that (a) before *r*-sounds diphthongisation is uncommon and (b) opposite implicational relationships hold between low, mid and high vowels in relation to lengthening before sonorant *r*-sounds and other other sonorants:

//V// → /V:/ / __ SON /	V = low ⇒ mid ⇒ high
//V// → /V:/ (/VV/) / __ R, rC[+voice]	V = high ⇒ mid ⇒ low

Section B

Structural Implications of Developments in the CG Vowel System

If a 3V system is accepted for Munster and Connacht dialects (see chapter 2), retraction and fronting of front and back vowels respectively can be seen to have had the effect of reducing the inherited 5V system to a ternary 3V system in some Irish dialects. Leaving this possibility aside, the majority[86] of vowel shifts within the short vowel subsystem have not had structural implications for the Gaelic vowel system. It is chiefly developments (mainly reductions e.g. vocalisation of fricatives, loss of tenseness of sonorants) in the consonantal system which have induced structural changes in the CG short vowel subsystem.

Phonemic split of short vowels

No phonemic splits of the CG short vowel system are discernible in modern Irish dialects outside of Donegal dialects where original //o// has split into /o/ and /ɔ/ (see chapter 5). Similarly, in some Donegal dialects, //i// and //e// have split into /i/ and /ɨ/, and /e/ and /ɛ/ respectively (see chapter 2). Phonemic split has occurred far more commonly in ScG where all vowels, except the high front vowel //i//, have split to form new phonemes. We may list the phonemic splits in ScG as follows:

//u//	→	/u/, /ɯ/
//o//	→	/o/, /ɔ/, /ɤ/
//a//	→	/a/, /ɤ/
//e//	→	/e/, /ɛ/, /ɤ/

We have seen in chapter 2 that the functional load between the high vowel /u/~/ɯ/ and the mid vowels /e/~/ɛ/ and /o/~/ɔ/ is minimal in ScG.[87] We also saw in chapter 2 that the distribution between /u/~/ɯ/, /e/~/ɛ/ and /o/~/ɔ/ is largely complimentary. This strongly suggests that each of the vowels /u/ and /ɯ/, /e/ and /ɛ/, /o/ and /ɔ/ were originally positional conditioned variants of the same phoneme i.e. //u//, //e// and //o// respectively. There is no need, in other words, to posit a substratum phonemic system such as Pictish or Norse in order to explain the innovative ScG 9V system, however, attractive this may seem.

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[86]With the possible exception of the unconditioned lowering of //u// in Donegal which may have caused the phonemicisation of the /o/~/ɔ/ contrast.

[87]However, more minimal pairs and near minimal pairs exist for the opposition /o/~/ɔ/ than for the other vowel contrasts listed here.

We have already alluded to the similar elaborate vocalic systems of the Norse languages. The elaborate systems of the Norse languages developed largely as a result of 'front' and 'labial' mutations, mutations which are common to the Germanic languages generally. The point is that these elaborate systems developed naturally within the Norse languages as internal linguistic phenomena. There can be little doubt that the resulting elaborate vocalic systems were a feature of the Norse language spoken in Scotland in the Middle Ages, see Gordon (1927/81: 270). It is tempting to posit substratum Norse influence on the ScG vowel system, either in terms of a wholesale replacement of the original Gaelic system for a Norse one, or as a result of the effects of lexical borrowing from Norse in the manner outlined above. The Norse and ScG vowel systems after all share quite a number of common features. Both short vowel systems are reproduced here for reasons of comparison:

i	ɯ	u	i	y	u
e	ɤ	o	e	ø	o
ɛ		ɔ	ɛ	œ	ɔ
	a			a	
ScG			**Old Norse (Gordon 1927/81: 266)**[88]		

Given the similarity between these systems, especially the existence of 'central' vowels and the distinction between two mid back and front vowels, it is difficult to deny that Norse may have played a significant role in the development of the ScG vowel system.[89] Much detailed research on the lexical borrowing of Norse words remains to be carried out before we may be in a position to comment with any confidence on the possible structural effects of Norse on ScG phonology. As pointed out in the introduction to this thesis, we are primarily concerned with establishing the possible internal linguistic factors for diachronic development in the Gaelic languages. The question of Norse, not to mention Pictish, influence on Gaelic phonology is properly the subject of another research project or indeed projects.

We claim that all new phonemic oppositions in ScG /u/~/ɯ/, /e/~/ɛ/~/ɤ/, /o/~/ɔ/~/ɤ/, /a/~/ɤ/ represent phonemicisations of original conditioned variants of the phonemes //u//, //e//, //o//, //a// respectively. The phonemicisation of these original allophones came about as a direct result of the elimination, or loss, of the original conditioning

[88]Einarsson (1945: 10) posits a 9V system for Icelandic.

[89]The possible relationship between the Norse 'central' rounded vowels /y ø œ/ and the rounded vowels /y ø/ of some south west Argyllshire dialects (GK, GA) is not discussed here.

environment. The factors which caused phonemic splits may be summarised as follows:

(a) vocalisation of fricatives
(b) phonemic merger in the consonant system

//e// → /e/, /ɛ/

The reduction of dental fricatives //θ'// and //θ// to /h/ may have led to a phonemic opposition between [e] and [ɛ]. The occurrence of higher allophones generally before palatal and palatalised consonants is a well-known fact of Gaelic phonology. We may assume that original //e// had higher allophones before palatalised //θ'// and relatively lower allophones before //θ//. Using [e] to denote higher allophones, and [ɛ] to denote lower allophones, we may describe this distribution in terms of an allophonic rule as follows:

//e// → [e] / __ θ'
→ [ɛ] / __ θ

The change //θ'//, //θ// > /h/ would have eliminated the original differential environment, thus leading to the phonemicisation of the opposition /e/~/ɛ/ as witnessed in the pairs *beithe* /e/ ~ *beatha* /ɛ/ (DOH), *beitheach*[90] /e/ ~ *beathach* /ɛ/ (GK).

//o// → /o/, /ɔ/

The phonemic split //o// → /o/, /ɔ/ may have come about in a number of ways. Indeed, given the relatively high number of minimal and near minimal pairs for the opposition /o/~/ɔ/, it is possible that the phonemic split is best explained as being due to a number of different factors rather than just one. The split may be explained variously as follows:

(1) The vocalisation of original //ð/ɣ// following //o// may have led to a phonemic opposition between [o] and [ɔ]. We have seen in our discussion of the development of //o// that the regular outcome of //o// in ScG is high-mid /o/ before vocalised /ɣ/. The vocalisation of /ɣ/ introduced a set of higher *o*-phones which contrasted with

[90]'birch grove' GK: 39. In these GK words //θ'//, //θ// are replaced by a glottal stop, GK (*ibid*).

relatively lower *o*-phones in most other positions. It is not clear whether or not these higher phones developed before the vocalisation of the fricative /ɣ/ or as a direct result of the vocalisation of /ɣ/, in the latter case perhaps deriving from an intermediate *u*-gliding diphthong. According to either of the above mentioned scenarios, the vocalisation of /ɣ/ would have led to the phonemicisation of the opposition /o/~/ɔ/. In particular, using [o] to indicate higher more rounded allophones of //o// and [ɔ] to indicate relatively lower allophones, the distribution between [o] and [ɔ] before original //ð/ɣ// and original hiatus may be described as follows:

//o//	→ [o] / __ ð/ɣ	//o//	→ [ɔ] / __ ð/ɣ > [o] once ð/ɣ > Ø
	→ [ɔ] / __ hiatus		→ [ɔ] / __ hiatus
	(Scenario (a))		(Scenario (b))

The vocalisation of /ɣ/ according to either scenario would have led to the phonemicisation of the opposition /o/~/ɔ/ as witnessed for instance in the pairs *odhar* /o/ ~ *ogha, othaisg* /ɔ/ (GL), the latter examples containing original hiatus.

(2) The vocalisation of original //v// following //o// may have led to the phonemicisation of the opposition /o/~/ɔ/ also. We have seen in an earlier chapter that the vocalisation of //v// following //o// regularly yields [o] which is relatively higher and more round than other reflexes of //o// in most other positions. It is not clear whether or not these relatively higher *o*-phones developed before or after the vocalisation of //v//. In either case, the vocalisation of //v// would have led to the phonemicisation of the opposition /o/~/ɔ/ as witnessed for example in *lobh* /o/ ~ *loth* /ɔ/ (DOH), *gobha* /o/ ~ *ogha, othaisg* /ɔ/ (GL), the latter examples containing original hiatus.

(3) The merger of the lateral phonemes //L// and //l// (discussed in chapter 1) in most central ScG dialects may have led to the phonemicisation of the opposition /o/~/ɔ/. We noted in chapter 5 that the high-mid vowel /o/ is the regular reflex of //o// before original //L// e.g. *collas, follaiseach*.[91] Before original //l//, however, /ɔ/ is the regular outcome of //o// e.g. *moladh, solas*. The distribution between higher [o] and lower [ɔ] may be described as follows:

//o//	→ [o] / __ L
	→ [ɔ] / __ l

[91]Especially when preceded by the labials /m b f/ and the velar /k/.

The merger between //L// and //l// would have led to the phonemicisation of the opposition /o/~/ɔ/.

(4) The development of segmental preaspiration of the type /x/ before original //k// may have led to the phonemicisation of the opposition /o/~/ɔ/. We noted in chapter 5 that high /o/ was the regular reflex of //o// before velar stops especially when preceded by the labial /b/. In particular, higher *o*-phones may have occurred in earlier stages of the language before original //k g// when preceded by //b//. The earlier distribution between higher [o] and lower [ɔ] phones may be described as follows:

//o// → [o] / b __ k, g
→ [ɔ] / b __ x

In this scenario, the development of segmental preaspiration, of the type /x/ before original //k//, may have led to the phonemicisation of the opposition /o/~/ɔ/ before /x/ and following /b/ as witnessed in the pair *boc* /boxg/ ~ *bochd* /bɔxg/ in most Hebridean dialects.

The phonemic split of //o// to /o/ and /ɔ/ in Donegal dialects may be explained as above (leaving aside (4)) although there is a further possibility which is worth mentioning for these dialects. We have noted that original //u// has been lowered and unrounded to /o/ in most Donegal dialects in all non-prepalatal environments except in absolute word final position. We noted in chapter 2 that reflexes of original //o// i.e. /o/ and /ɔ/ are in complementary distribution in most Donegal dialects. Based on this distribution, we may conjecture that original //o// in Donegal dialects would have had higher and lower allophones in the following environments, where [o] denotes relatively higher allophones and [ɔ] denotes relatively lower allophones:

//o// → [o] / __ N n m b g d
→ [ɔ] / __ t k s x h r (R) r' t' ʃ l' (L') (Donegal)

The unconditioned lowering of original //u// to [o] (see below where we discuss phonemic merger), in Donegal dialects would have led to (1) partial phonemic merger of //u// with higher allophones of //o// and (2) the phonologisation of the opposition /o/~/ɔ/ — in the environments __ t k s x h r (R) r' t' ʃ l' (L').

//a// → /a/, /ɤ/ and //e// → /e/, /ɤ/

We have seen in earlier chapters that the regular reflex of the unround vowels //a e// before /ɣ/ is the unround vowel /ɤ/. It is not entirely clear in all cases, whether or not this vowel had developed before the vocalisation of /ɣ/ or as a direct result of the vocalisation of /ɣ/, although the fact that /ɤ/ occurs in dialects which retained intervocalic and word final (stressed) /ɣ/ would seem to suggest the former, for these dialects at least. We have also noted a tendency for these vowels to be retracted before voiced velars generally. We may postulate therefore that a partial allophonic rule for each of //e// and //a// was as follows:

//e a// → [ɤ] / __ ɣ

The vocalisation of the velar fricative /ɣ/ would have led to the phonemicisation of the oppositions /ɤ/ and /e/, /ɤ/ and /a/ as witnessed for instance in the pair: *adhairc* /ɤ-ər'k'/ ~ *adha* /a-a/, *athar* /a-ər/[92] (GL).

//o// → /ɔ/, /ɤ/ / __ C'

The partial merger of the nasal palatalised phonemes //n'// and //N'// (discussed in chapter 1) following the back vowels //o u// may have led to the phonemicisation of the opposition /ɔ/~/ɤ/. We showed in chapter 1 that //n'// and //N'// merged in central ScG dialects, particularly when preceded by the back vowels //o u//. We noted in chapter 5 that unrounding of //o// occurred frequently before the palatal nasal //N'//. We may describe the allophonic distribution of //o// partly as follows, before the merger of //n'// and //N'//:

//o// → [ɤ] / __ N' (L', r'C'[svar])[93] •
→ [ɔ] / __ C' (otherwise)

The partial merger of //n'// and //N'// following //o// would have led to the phonemicisation of the opposition /ɤ/~/ɔ/ before certain palatals, as witnessed, for example, in the pair *coin* /kɔ̃N'/ ~ *coinnich* /kɤN'ə/ (GL).

Alternatively, the loss of phonemic palatalisation of labial segments may also have been a factor in the phonemicisation of the contrast /o/, /ɔ/~/ɤ/. If we assume that //o// would have developed the allophone [ɤ] before palatalised labials, the loss of the

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[92] *adha, athar* contain original hiatus sequences.
[93] See chapter 5.

conditioning factor would have led to the phonemicisation of /o/, /ɔ/~/ɤ/.
Alternatively, the loss of phonemic palatalisation of labial segments may also have been a factor in the phonemicisation of the contrast /u/~/ɯ/. If we assume that //u// would have developed the allophone [ɯ] before palatalised labials, the loss of the conditioning factor would have led to the phonemicisation of /u/~/ɯ/.

//u// → /u/, /ɯ/

We noted in chapter 2 that the functional load of the opposition /u/~/ɯ/ is the lowest of all amongst Gaelic vowel oppositions. All instances of [u] and [ɯ], in GL at least, could be accounted for by means of allophonic distributional rules. The only exception which we noted was the near minimal pair *uinnean* /ũ/ ~ *uinneag* /ɯ̃/. However, we also noted that in the case of *uinneag* there was variation between /ũ/ and /ɯ̃/. The almost complete complementary distribution between [u] and [ɯ], in GL at least, implies that the opposition between /u/ and /ɯ/ is minimally phonemic, if it is phonemic at all (see chapter 2). Given this situation, it is futile to attempt to seek phonological environments in which the opposition may originally have come about. The synchronic evidence shows clearly that the phonemic split of //u// to /u/, /ɯ/ (if that is what it is) is a relatively recent phenomenon in GL at least. We may note in this respect, for instance, that the unrounding of //u// before //N'// must have occurred after the partial merger of //n'// and //N'// i.e.

(1) //n'//, //N'// → /N'/
(2) //u// → /ɯ/ / C __ N', C = /s t d sL/[94]

Only this ordering accounts for the development in the likes of *duine* /dɯ̃N'ə/, *sluinneadh* /sLɯ̃N'əɣ/ (GL).

Alternatively, the loss of phonemic palatalisation of labial segments may also have been a factor in the phonemicisation of the contrast /u/~/ɯ/. If we assume that //u// would have developed the allophone [ɯ] before palatalised labials, the loss of the conditioning factor would have led to the phonemicisation of /u/~/ɯ/.

[94]See chapter 6.

The structural effects of lexical borrowing

There is some evidence to suggest that phonemic oppositions in Gaelic with low functional loads may be reinforced by lexical borrowing. The structural effects of lexical borrowing, although a well-known fact in the case of English historical phonology, is a relatively under-researched topic in the case of the Gaelic languages. In particular, lexical borrowing can, in some cases, bring about the phonemicisation of allophonic variants, see Bynon (1977: 239). This may be illustrated with a few examples, the lexical borrowings in each case, coming from English. In chapter 2, we established the phonemic opposition between /e/ and /ɛ/ for GL e.g. *beathach* /e/ ~ *beatha* /ɛ/. We also noted that in the position preceding /s/ that /ɛ/ was the normal reflex of //e// for this dialect e.g. *deas, easgann, leas, seasamh, seasg, teas*. However, the English loan *bracelet* is realised as /breslɛt'/. The borrowing of English *bracelet* in GL:63 with /e/ rather than /ɛ/ introduces the opposition /e/~/ɛ/ into the environment __ s, thus reinforcing the opposition /e/~/ɛ/ in this dialect. In the same dialect, the normal reflex of CG //e:// is /e:/ before //n'// which usually becomes /n/ following front vowels[95] e.g. *léine* /Le:nə/, *fhéin* /he:n/. English long *e* is borrowed variously as /e:/ and /ɛ:/ (usually the former) in GL e.g. *shave, chair, pane* /e:/ but *plain* /ɛ̃:/. The borrowing of English *plain* with /ɛ̃:/ introduces the oposition into the environment __ n, thus reinforcing the opposition between /e:/~/ɛ:/ in this dialect. In chapter 2, we also noted that the borrowing of *triubh* /u/ introduced the vowel [u] into the environment C' __ thus, reinforcing the opposition between /i/~/u/ in Irish. In chapter 3, we noted that the lexical borrowing of English words containing postvocalic labial fricatives /v/, reintroduced this sound into ScG at a stage when original non-nasalised labial fricatives had been vocalised. We noted earlier in the present chapter than lengthening of //u// before rC[+voice] groups does not occur in Donegal or Connacht Irish dialects, e.g. *muirnín, muirneach, urnaighe*. Moreover, long /u:/ does not occur in native words before the groups rC[+voice] in these dialects. However, English *turn* was borrowed as *tuirne* with long /u:/ in all Irish dialects, including Donegal and Connacht. The borrowing of *tuirne* with /u:/ alters the phonological rules of these dialects. In particular, it introduces long /u:/ into the environment __ rC[+voice].

We have seen that there is evidence for lexical borrowing causing structural changes in the phonology of the borrowing language. A fuller investigation of the structural impact of loan words on the phonology of the Gaelic languages is a desideratum for Gaelic language studies, and is outwith the scope of the present study. Further study

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[95]But /N'/ in *gréin* (D) of *grian*.

along the lines outlined briefly above for English loan words in the modern Gaelic languages would greatly increase and enhance our understanding of the structural impact of borrowings generally on earlier stages of the language, from languages including Latin, Pictish, Norse, French and Scots.

The phonemic splits discussed above, and the development of new phonemic upgliding diphthongs as a result of compensatory lengthening before original fricatives and tense sonorants, both had the effect of augmenting the inherited CG phonemic inventory. In particular, the development of upgliding diphthongs involved the creation of a new vocalic subsystem. Compensatory lengthening before original fricatives and tense sonorants brought about a number of shifts across short and long subsystems.

Phonemic merger of short vowels

Some partial mergers have occurred between short vowels in all varieties of Gaelic, all of which have affected only the lexical incidence of the vowel segments involved. No complete 'system-destroying' mergers have occurred except possibly in some peripheral dialects where back unround vowels /ɯ/ and /ɤ/ may have merged. However, it is far from certain whether or not such a distinction between /ɯ/ and /ɤ/ ever existed in such dialects. Partial mergers have occurred as a result of the processes of (1) *raising*, (2) *lowering*, (3) *retraction*, (4) *fronting*, (5) *unrounding* and (6) *rounding* discussed in section A of the present chapter. We have argued that, in effect, most if not all of these partial mergers, were phonetically motivated, most of them being explained as cases of progressive assimilation between the vowel and the following consonantal segment. These changes were therefore on the whole conditioned changes. The nearest example to an unconditioned change in the short vowel system is the lowering of //u// in Donegal dialects, which we discuss separately below, because of its possible impact on the vowel system of Donegal dialects.

The partial merger of front (//i// and //e//) with back vowels (//u// and //o//) before broad and slender consonants, has, according to one interpretation, resulted in the loss of the phonemic front–back distinctions //i//~//u/, //e//~//o// in Munster and Connacht dialects. These developments, which involve a reduction in phonemic inventory, are in marked contrast to developments in Donegal and ScG, which involve an increase in phonemic inventory. We may conclude then that there have been two opposing

tendencies of development in Gaelic in terms of phonemic inventory: reduction in southern dialects and augmentation in northern dialects.

In the following, we turn our attention to developments which, though they appear to have been phonologically motivated, may also have occurred under other circumstances which can be best described as a tendency to make the best use of the phonological vowel space. We intend therefore to discuss changes which may be explained as being due to both the structural relationship between individual vowels (in particular the relative distance between them) and also to consonantal environment. The developments in question involve the various mergers which have occurred between the low vowel //a// and the neighbouring mid vowels //o// and //e//. These are as follows:

	__ C			__ C'	
(1A)	//o//		(1B)	//o//	/o/
	//a//	/a/		//a//	
(2A)	//e//		(2B)	//e//	/e/
	//a//	/a/		//a//	

Each of these developments is related in a number of ways. Those marked with the same number (1 or 2) represent different outcomes as a result of the partial merger of the same two phonemes. Those marked with the same letter (A or B) represent mergers which have occurred as a result of the same processes i.e. lowering in the case of A and raising in the case of B. Each of developments A and B occurs in complementary environments i.e. lowering (A) occurs before nonpalatals and raising (B) occurs before palatals.[96] Each of the mergers described above occurs to different degrees in Irish and ScG. There are, in addition, various inverse relations between each of the mergers 1A, 2A, 1B and 2B in terms of the frequency with which each occurs in Irish and ScG. These relationships may be described as follows:[97]

(1A) ScG >> Ir

(1B) Ir >> ScG (?)

(2A) Ir >> ScG

(2B) ScG >> Ir (?)

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[96]I do not include here the less common mergers of //a//, //o// > /o/, //e//, //a// > /e/ before nonpalatals, or //a//, //o// > /a/ and //a//, //e// > /a/ before palatals.

[97]In the case of 1B and 2B, the frequency correlations are impressionistic. This is indicated by a question mark.

In earlier chapters we have noted that //o// is unrounded to /a/ and that //a// is raised to /e/ more often in ScG than in Irish dialects. Similarly, we have noted that //e// is lowered to /a/ and //a// is raised to /o/[98] more frequently in Irish than in ScG dialects.

We claim that these various inverse relations are best explained by the relative position held by the low vowel //a// in the phonological vowel space of Irish and ScG dialects. Furthermore, we claim that the overall relative position of the vowel //a// in Gaelic phonological vowel systems is better described in terms of a series of micro-phonological environments rather than in terms of macro-phonological environments, which, we have argued in chapter 2, are at best unhelpful. Indeed, as we will see, it is difficult, if not impossible, to map the relative position of //a// accurately in phonological vowel spaces without reference to mini-phonological spaces. In conclusion, the relative position of //a// is dependent upon and determined by the nature of the following consonantal environment.

We have argued in earlier chapters that developments 1A and 2A and the degree to which they occur depend to a large extent on the environment __ C[+velarised] and in particular on the degree to which the feature [+velarised] is characteristic of the consonantal system as a whole. We noted in chapter 1 that the feature [+velarised] is more widely used in Irish dialects than in ScG dialects as a distinctive feature. The low vowel /a/ synchronically takes on a more back articulation in the environment __ C[+velarised]. There is no good reason to believe that this was not always the case in Gaelic. In this environment, therefore, reflexes of //a// would have had a more back, certainly less front, articulation. Such a distribution in this environment would have left a gap in the low front area of the vowel space defined by the environment __ C[+velarised]. We have noted in an earlier chapter that the most favourable environment for the lowering of //e// is in the environment __ C[+velarised]. Since the preceding two facts are unlikely to be coincidental and unrelated, it seems likely that the lowering of //e// to /a/ was motivated, in part at least, by the common tendency to occupy unused phonological space.[99] The relatively more frequent occurrence of the lowering of //e// to /a/ in Irish as opposed to ScG may be explained by the fact that the feature of velarisation is used more widely in Irish as a distinctive feature in the consonantal system. The generally more back nature of /a/ in Irish dialects can be seen

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[98]This is especially the case if we include the many instances of //a// > /o/ > /i/ in Munster and Donegal dialects.

[99]Given the gap in the low front area of the vowel space defined by the environment __ C [+velarised], the lowering of //e// before broad consonants can also be seen as a desire to maximise on the relative distance between //i// and //e//.

also in the relatively more frequent raising of /a/ to /o/ in Irish (development 1B). The argument put forward above takes structural features into account in an attempt to explain the lowering of //e// to /a/. This argument does not preclude the possibility of the change //e// > /a/, having been established in certain environments in the manner described, and then subsequently spreading by lexical diffusion or by other means. It is possible for example that the occurrence of back allophones in a significant number of environments may have led to a general unconditioned backward movement of the allophones of //a//.

We now turn our attention to the lowering of //o// to /a/ which is clearly a northern phenomenon. We have noted in chapter 5 that the most favourable environment for the lowering of //o// to /a/, i.e. for the partial merger of //o// and //a// in Irish and ScG was:

C_x __ C_y C_x = f, k C_y = l, r, s

The development //o// > /a/ in these environments suggests that the opposition between //a// and //o// was neutralised in these environments in favour of an unrounded vowel. The partial merger in these environments suggests that (a) reflexes of //a// had back allophones following the segments //f k// and preceding the segments //l r s//, and/or (b) that //o// was delabialised by dissimilation following the segments //f k//. Given that //s// is generally neutral with regard to velarisation pan-Goedelically, the grouping of //l r// with //s// in this way suggests that the CG broad lenited sonorants //l r// may have been relatively neutral segments.

It may be significant that the change //o// > /a/ occurs most frequently in dialects where the normal reflex of original //o// before the segments //l r s// a lower vowel /ɔ/ (Donegal and ScG); similarly, //o// > /a/ is less common in dialects where the normal reflex of //o// is a higher vowel (Munster). If we assume that the synchronic reflexes of //o// reflect the historical situation at the time of lowering of //o//, this suggests that the lowering of //a// occurred most frequently in dialects which tended to have lower allophones of //o// before the segments //l r s//.

Alternatively, the lowering of //o// to /a/ and thus the partial merger of //a// and //o// may have occurred as a tendency to occupy unused phonological space. Reflexes of //a// before the segments __ r s (and perhaps originally before //l// also) are generally front vowels in ScG, see GL: 52-3. It is possible that //o// was lowered by

dissimilation as described above (see (b)) in dialects where //a// was realised as a non-back (front or central) vowel before the segments //l r s//. In such a scenario, the lowering of //o// to /a/ could be seen as a tendency to occupy unused phonological space in the low vowel space defined by the micro-phonological environment __ l, r, s. Given that the lowering occurs in dialects where //a// is generally a non-back vowel (particularly before the segments //r s//), and where reflexes of //o// are generally of the lower type, i.e. in northern Gaelic dialects,[100] the second alternative explanation seems the more appropriate. It is possible of course that either explanation or both presented here may have been involved in the partial merger of //a// and //o//.

We conclude that developments 1A and 2A can be explained as successful attempts to maximise the use of the Gaelic phonological vowels space defined by certain micro-phonological environments.

Our discussion of the partial mergers of //a// with neighbouring mid vowels stresses the central importance of the position of the low vowel //a// in the phonological system. Labov (1994: 257), in a different context, notes that

> the front/back balance of neighbouring phonemes is a decisive factor in determining whether an /a/ phoneme will shift phonetically to the front or the back. Moulton . . . demonstrates decisively that the phonetic position of /a/ in Swiss German dialects is linked to the existence of an /æ/ or /ɔ/ phoneme. Any skewing of the system of neighbouring phonemes is reflected in the allophones of /a/: systems with /æ/ but no /ɔ/ show back varieties of /a/, those with /ɔ/ but no /æ/ show front varieties, and so on.

The primacy of the low-mid vowels over the positioning of the low vowel /a/ cannot be taken as a given. In a chain shift involving //a// and low-mid vowels, the identity of the entering and leaving elements is uncertain.[101] In the case of Gaelic, we argue that it is the positioning of the low vowel //a// which is the decisive factor in determining the quality of reflexes of the CG mid vowels //e// and //o// (in particular micro-phonological environments). We argue also that the position of //a// is in turn dependent upon the degree of velarisation of the following consonantal environment.

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[100]The generally more front nature of /a/ in ScG is reflected in the relatively more common raising of /a/ to a front vowel, usually /ɛ/ (development 2B).

[101]On the terms entering and leaving elements, see Labov (1994: 119).

The raising of //a// in the micro-environments g, k __ l', r' d' in both Irish and ScG suggests that //a// and //o// may have been neutralised in these environments, thus suggesting that //a// may have had back allophones in these environments also. We have noted in previous chapters that a following //l' r'// is unlikely to bring about any significant change in a preceding vowel (with the exception of //u// in Irish dialects). The colour of vowels in these environments is therefore more likely to have been influenced by the preceding consonantal environment rather than the following consonantal environment. In the case of //a// preceded by the velars //g k//, we might expect back allophones. In our discussion of the word class {//a// > (*)/o/ / g, k __ l', r' d'}, common to both Irish and ScG, we noted that the functional load of the opposition between //a// and //o// is likely to have been relatively low in the micro-environments g, k __ l', r' d'. We suggested that the raising of //a// in these environments may have occurred as a result of a relative 'gap' — in this case in terms of phoneme incidence — in the low back vowel space defined by the micro-environments g, k __ l', r' d'. The motivation suggested here for the raising of //a// is different, though related to, that suggested above for the lowering of //e// to /a/. In the present case, the 'gap' reflects a defective distribution of the phoneme //o// in certain environments, whereas in the case of //e// > /a/, the gap was 'created' by the 'retraction' of //a// in certain environments.

Although we have referred to the partial merger of //a// and //o// in the environments g, k __ l', r' d' , it is not entirely clear that a merger in the ordinary sense of the word occurred in such cases. Indeed, we claimed that there was some evidence for what Labov has referred to a 'near-merger' whereby neighbouring phonemes occupy a shared three-dimensional space but which nevertheless reside in different tracks. This was suggested by the existence of a number of minimal and near minimal pairs for vowels which are generally believed to have belonged to the same phoneme /o/, deriving from //o// and //a//. Such contrasts could conceivably be explained as later attempts, following the merger of //a// and //o//, to differentiate between homophonic lexemes. However, the regular treatment of reflexes of original //a// in such pairs *vis à vis* those of //o// suggests that this type of differentiation is unlikely. The acceptance of the concept of a near-merger in Gaelic fundamentally alters our understanding of the Gaelic vowel space. In particular, it suggests that the Gaelic vowel space, like those found in Germanic languages, may utilise different tracks in order to maintain lexical contrasts. This explanation is more satisfactory than the traditional hypothesis which posits a post-merger split of the phoneme /o/ < //o//, //a// since it accounts for

the fact that original CG lexical distinctions are regularly maintained rather than blurred.

Unconditioned Phonological Change (Donegal)

It is a fundamental tenet of the present thesis that most, if not all, vowel shifts in the CG vowel system are phonologically conditioned.[102] We now turn our attention to a possible instance of unconditioned phonological change in Donegal dialects, illustrated mainly from DD. In chapter 2, we drew attention to a general tendency to centralise all short vowels in Donegal dialects. It is not clear what, if any, relation this bears to the tendency to shorten long stressed vowels in these dialects, but it is possible that both of these developments are part of a chain shift phemomenon across vowel subsystems. On the shortening of stressed long vowels in Donegal dialects, see Stockman (1986), Ó Dochartaigh (1987: 175-7), Hughes (1994: 625), Ó Baoill (1996a: 3-5). On the tendency to centralise short vowels in Donegal Irish, see Wagner (LASID I: xxii), Hughes (1994: 628). Wagner, commenting on the wide phonetic radius of Irish short vowels, comments that there is

> free interchange of central vowels . . . all very close to the irrational "vowel" ə, is a common feature in Irish dialects, and is often the despair of the phonetician who tries to to define them exactly' (ibid).

Nowhere is this more true than in the case of Donegal dialects in my own experience, and it is probable that Donegal dialects, with which he was best acquainted, were to the forefront of Wagner's mind when he penned these words.

The tendency to centralise short vowels in Donegal dialects is more common with non-low vowels than in the case of /a/, although there is evidence of /a/ being raised and centralised particularly before palatals. Centralisation of high vowels naturally implies lowering which may be seen as a process of laxing. Laxing involves an increase of sonority and a decrease in colour (palatality or labiality) for a given degree of phonological height (Donegan 1985: 120). Centralisation of mid vowels normally implies raising and, unlike the centralisation of the high vowels //i u//, is dependent upon phonological environment as we shall see. Centralisation of the low vowel /a/ naturally involves raising. The high vowels //i u// are unconditionally lowered in Donegal dialects, except in word final position before final original //v θ// (see chapter 6). A survey of the Donegal monographs shows that CG //i// has frequently been lowered to [ɪ] in Donegal dialects, which may or may not contrast phonemically with

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[102]This also applies to the vocalisation of the voiced fricatives (see above).

/i/ (see chapter 2). We noted the possible example of /i/ *fírinne* ~ /ɨ/ *fíreann* (TY). Ó Baoill (1996, 1996a) provides many more instances from Donegal dialects. The lowering of /i/ to [ɨ], though it occurs frequently, is by no means as universal a phenomenon as the lowering of //u//. The lowering of the high vowels //i u// may be seen as unconditional as it occurs irrespective of consonantal environment.[103] In particular, it occurs before both voiced and voiceless consonants. In chapter 5, we noted that the phonemic split of //o// occurred in complementary phonological environments as follows:

//o// → /o/ [o] / __ N n m b g d
→ /ɔ/ / __ t k s x h r (R) r' t' ʃ l' (L') (Donegal)

Clearly then, //o// was centralised only before certain voiced consonants, never before voiceless consonants. We may compare the retention of the mid vowel //e// in some Donegal dialects before the voiced consonants /d g/. We may note also that before palatals //o// and //a// are centralised and raised only before voiced consonants, not usually before voiceless consonants. We conclude that the raising of low and mid vowels (//a o//) is phonologically conditioned and usually only occurs before voiced consonants. However, the lowering and laxing of the high vowels is unconditioned. The unconditional context-free lowering of //u// (other than in word final position) in Donegal dialects may have had a fundamental effect on the phonological structure of Donegal vowel systems. In particular, as we have noted above, it may have had the effect of phonologising the opposition between /o/ and /ɔ/ in these dialects.[104] However, it is also possible that the lowering of //u// to /o/ may have had the effect of causing reflexes of //o// preceding *voiceless* consonants to be lowered. This also would have had the effect of phonologising the opposition between /o/ and /ɔ/.

O'Rahilly (IDPP: 177) is surely incorrect in assuming that original //o// was raised to /u/ in certain environments and

> when, after these developments had taken place, unmutated short *o* was, under Scottish influence, lowered to *ɔ*, short *u* (whether original or developed from *o*) was correspondingly lowered to *o̤*. In this way short *u* for the most part disappeared from the dialect.

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[103]With the exception already mentioned of //u// which is retained in absolute word final position. It is not clear whether or not //u// was lowered to /o/ before it was fronted to /i/ before palatal consonants in Donegal dialects.

[104]For the effects of context-free phonological developments on phonological structure, see Lass (1984: 319).

Leaving aside the very dubious postulation of Scottish influence,[105] the raising of //o// to //u// in the manner described by O'Rahilly and the subsequent lowering of reflexes of //u// is difficult to accept as (a) raising of //o// to //u// is not well attested pan-Goedelically, and (b) the raising and subsequent lowering of //o//, though plausible, is uneconomical in explanatory terms. This hypothesis may be questioned also on the grounds that the distribution of ScG /ɔ/ and Donegal /ɔ/ are not entirely parallel. The lexical incidence of /ɔ/ in ScG and Donegal Irish is quite different.[106] This may be illustrated by the following pairs:

	Donegal	**ScG**
cogadh	/o/	/ɔ/
Nollaig	/o/	/ɔ/
dona	/o/	/ɔ/
bodach	/o/	/ɔ/

Table 8B.1

Furthermore, O'Rahilly's explanation does not give due consideration to structural implications, which offer a more plausible explanation of the lowering of //u// and its partial merger with //o//.

Evidence for Chain Shifts

We have just seen that O'Rahilly (IDPP: 177) explains the lowering of Donegal //u// and //o// (in certain environments only) as a chain shift phenomenon. We have alluded to this possibility ourselves although we deem it unlikely. Our survey of the historical development of the CG short vowels shows that there is no evidence whatsoever in Gaelic for the type of large scale chain shifts (either pull or push) which have been reported in other languages, for instance, the *Great Vowel Shift* in English, see Lass (1984: 126 ff.). We have suggested above that there may be a chain shift relation between the shortening of long stressed vowels in Donegal dialects and the centralisation of short vowels in these dialects. If correct, this would provide a further possible instance for a chain shift in Gaelic vowel phonology. The most convincing case of a chain shift in Gaelic, observed in this thesis, is the raising of original *ao* //əː// in northern Gaelic dialects as a result of the vocalisation of the velar fricative /ɣ/ preconsonantally.

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[105]The ideology of Scottish influence has been discussed by Ó Buachalla (1977: 96-101) and more recently by Ó Dochartaigh (1987: 219-31 esp. 225 ff.).

[106]Indeed, it is possible that the phonologisation of the opposition /ɔ/~/o/ in ScG and Donegal may have occurred under different phonological conditions. It follows that these processes may have ocurred independently in both languages.

Non-phonological developments

The phonological data presented in previous chapters provides ample evidence for the neogrammarian regularity principle of language change. However, we have also noted at various points a number of developments which show that the regularity principle is insufficient to account for the full range of phenomena in Gaelic diachronic phonological change. Cf. Bynon (1977: 190). The main non-phonoligical developments observed in previous chapters refer to lexical conditioning, analogy, morphological conditioning and hypercorrection.

Bynon (1977: 189) asserts, based mainly on advances made in the field of French dialectology that 'it is essential that lexical and phonological developments be examined together'. However, lexical developments *per se* have not been a major concern of this thesis. For an example of the French Gilliéronesque approach to lexical change in Gaelic language, see Hughes (1992). Despite our concentration on phonological developments, we have noted that certain phonological developments have been lexically conditioned. The best example of this is the lengthening of original //o// before the group *rt* in ScG and northern Irish dialects which is clearly lexically conditioned. It occurs regularly in the verb *doirt* and its derivatives but never in *gort*, or *goirt* or their derivatives.

Bynon (1977: 43) identifies 'two types of diachronic process, sound change and analogical formation' which reflect 'the division of linguistic structure into two distinct levels, that of phonology and that of grammar'. An example of analogical grammatical change or levelling where inherited patterns are functionally reinterpreted, can be seen in Connacht dialects where the inherited inflectional pattern //o// / __ C ~ //u// / __ C' is replaced with new ones e.g. /o/ / __ C ~ /e/ / __ C'; /au/ / __ C ~ /au/ / __ C'. Examples include *olc* /o/ ~ /e/ *oilc* for older *uilc*; *bord* /au/ ~ *boird* /au/ for older *buird* (GCF: 18-9). We have also suggested that the ScG form *toigh* owes its initial broad consonant and vocalism to other *s*-stems such as *magh* ~ *moigh*. Because of analogical change of this type, as pointed out in the introduction, we have as far as possible avoided inflected vowel forms in our historical description of individual vowels.

Bynon (1977: 42) notes also that 'the principle of analogy may extend beyond morphologically complex forms'. She mentions the possibility of lexical innovation occurring as a 'result of sound symbolic associations of various kinds . . . which are ultimately based on inherited words'. She adds that such innovations are

> not clearly analysable at the grammatical level. Their sound symbolism is on the other hand not simply dependent on 'natural' associations but clearly depends to some degree on language-specific formal-semantic associations. (ibid)

Bynon also alludes to analogical developments occurring 'in sets of words whose sole connecting link is a semantic one'. We have noted several instances of such developments in both Irish and ScG. These include the developments of the following lexical items: *toirse* > *tuirse* perhaps influenced by the verb *tuir* (ScG), *amhrán* perhaps influenced by *óráid* (Irish, ScG), *inchinn* perhaps influenced by *eineach* (ScG).

Bynon (1977: 185) discusses the possibility of hypercorrection occurring as a process of diachronic change. We have suggested tentatively that ScG *tuirse, tuirseach* < *toirse, toirseach* may represent a hypercorrection based on an Irish form with /i/. We also suggested in this case, and also in the case of *Muire*, that the *u*-vocalism in ScG may represent a literary pronunciation.[107]

[107] *u*-vocalism is not common in forms of *Muire*.

Conclusions

This thesis surveys the historical phonology of short stressed vowels in Irish and ScG by describing and, where possible, accounting for the major and significant minor diachronic developments in the CG short vowel system. Its focus on internal linguistic factors, in particular on the crucial importance of phonological environment, rather than on external linguistic or extra-linguistic factors, in seeking to explain individual developments, sheds considerable new light on the historical phonology of Gaelic. This study shows that the majority of, if not all, short vowel changes in Gaelic are phonologically conditioned, at least in the initial changes of a shift, although there is evidence also for non-phonological factors, such as analogical developments and lexical conditioning. The main conditioning factor for phonological change has been the immediate consonantal environment, in particular the following cosonantal environment. The preceding consonantal environment has had the least effect on the diachronic development of CG vowels although it has played a significant role in the development of non-front vowels, especially //o//. We have drawn attention to some possible instances of vowel shifts which may have occurred due to the universal tendency to maximise available vowel space.

Structural changes in the subsystem of short vowels in Irish and ScG have been fundamentally different both in terms of outcome and causation. The overall development in most Irish dialects has been simplification of the inherited system, whereas in ScG and Donegal the overall development has been one of elaboration. Certain shifts within the subsystem of short vowels in Irish have caused structural change. According to one interpretation, the fronting of mid and high back vowels, and the retraction of mid and high front vowels has had the effect of transforming the CG quinary 5V system into a linear 3V system. We suggested also that the unconditioned lowering of //u// in Donegal may have caused the phonemicisation of the opposition /o/~/ɔ/ in these dialects. Shifts within the short vowel subsystem of ScG have had little structural effect other than to alter the incidence of phonemes, e.g. the lowering of //e// to /a/ in the environment C' __ C. Structural changes in the ScG short vowel system have for the most part been brought about by structural changes in the consonantal system. Vocalic shifts across subsystems, in many cases consequently creating new vocalic subsystems — mainly a set of upgliding diphthongs — have been largely due to changes in the consonantal system, particularly the vocalisation of voiced fricatives and the laxing of originally tense sonorant segments. We conclude that the historical short vowel phonology of Gaelic has been determined

by four main factors: (a) the following consonantal environment, particularly marked segments such as velarised and palatalised consonantal segments, (c) the vocalisation of fricatives, (d) compensatory lengthening before originally tense sonorants, (d) the position of //a// in the phonological vowel space.

The various diachronic developments discussed in this thesis provide much corroborative evidence for the main dialect divisions established by the pioneers of Gaelic dialectology such as O'Rahilly (1932), Borgstrøm (1937, 1940, 1941), Jackson (1951, 1968) and so on. Since this thesis is concerned more with establishing what the major diachronic developments in the CG short vowel system have been, rather than dating them, we are not in a position, based on the results obtained here, to modify or comment on the validity of the concept of Common Gaelic as espoused by Jackson (1951). Only future research on the relative chronology and dating of these changes will enable us to test Jackson's claim that

> no severance between Eastern and Western Gaelic can be demonstrated for remote antiquity, nor for the late fifth century either; on the contrary, that the oldest traceable divergence is not older than the tenth century and that we cannot really speak of a separation until about the thirteenth century (Jackson 1951: 79).[1]

The pan-Goedelic approach adopted here illustrates the importance of considering Irish and ScG on an equal footing in trying to establish what the major vocalic developments in the history of Gaelic have been, and the phonological environments in which each has occurred. Against this basis, we may check and compare the development of individual words. In some cases, this leads to a reassessment of received 'phonetic etymologies'[2] and orthographic forms. The pan-Goedelic approach also highlights the fundamental importance of the synchronic evidence of the modern dialects in reconstructing the history of the Gaelic languages.[3]

A major conclusion of this thesis, discussed in chapter 8, is that the overall tendencies of development within the subsystem of short vowels may be summed up by the following formula:

> *Gaelic vowels tend to lose inherent features and acquire vocalic features which they lack*

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[1]The implication, however, of Ó Buachalla (1977), Ó Maolalaigh (1995/96) and Ó Sé (1996) is that Irish and ScG were significantly different in certain respects long before the thirteenth century.
[2]See Bynon (1977: 185).
[3]On the importance of the 'living dialects' to historical reconstruction, see Bynon (1977: 183).

This formula may be refined as follows: Front vowels tend to lose their front feature when followed by velarised consonants; back vowels tend to lose their back and round features before palatalised consonants. Similarly, front and back vowels tend to retain their features (a) before palatalised and velarised consonants respectively, and (b) before neutral consonants. The loss and acquisition of features can in most cases be seen as a tendency to resolve disparity between the plus or minus value of the front (or back) features of vowels and the palatalised (or velarised) feature of following consonantal segments respectively. Similarly, vowel features tend to be retained when there is parity between the value of the front or back feature of vowels, and the palatalised or velarised quality of following consonants.

We concluded that mid vowels are more likely than low and high vowels to change quality along a vertical axis whereas high vowels are more likely than other vowels to change colour, and quality along a horizontal axis. This establishes a 'rich get richer and poor get poorer' principle for vertical movement whereby higher vowels become higher and lower vowels become lower.

The nature of certain vocalic developments suggests a new way of viewing the Gaelic phonological vowel space. In particular, we have suggested that in terms of both allophony and diachronic development, the Gaelic vowel space is best understood as consisting of a number of micro-phonological vowel spaces, each defined by consonantal environment. Given the all-pervasive influence of consonantal environment, particularly the following consonantal environment, on vowel shifts generally in Gaelic, this analysis of the vowel space has a natural basis in Gaelic phonological terms. We have also suggested tentatively the existence of a central and peripheral path in the Gaelic vowel space. However, further research will be needed to confirm or dismiss the usefulness of this model.

Directions for further research

The corpus upon which our observations are based is necessarily limited in scope, and the results arrived at should be viewed accordingly. Nevertheless, the present study provides a good base with which the phonological systems of other dialects, not considered here, could be compared relatively easily. The database could be widened to include a wider coverage of dialectal types which would undoubtedly refine many of the results and conclusions presented in the present thesis. The restricted nature of our corpus means that in places there are inevitable gaps. We have, for instance, failed to note a significant number of reflexes of the following sequences in the monographs:

//iR//, //ovC//, //evC//, //uɣC//, //iɣ(')C// and so on. Further research may help to fill such gaps in our knowledge. However, in some cases, these gaps may have more to do with the phonological structure and phonotactics of Gaelic rather than a deficiency in our sources. A detailed study of the phonotactics of Gaelic vowels, which is itself a desideratum, would explain the existence of some of these gaps and would greatly increase our understanding of the functional load of certain oppositions. We have made brief inroads into this line of research and indicated how this could be done, for instance, using computer software packages such as *Gléacht*, which has the powerful advantage of providing more or less instant phonotactic information on Irish phonology which has hitherto been impossible on such a large scale. We have suggested how certain phonotactic constraints or gaps may have contributed to individual vowel shifts.

Given the conditioned nature of most, if not all, of the vocalic developments surveyed in this thesis, we have little doubt that a detailed phonetic study of Gaelic consonants[4] would further explain the motivating factors behind individual changes. In chapter 2, when we surveyed the allophonic distribution of individual vowels, we suggested some possible acoustic and articulatory features of individual segments, which a detailed phonetic study would either confirm or disprove.

The structural effects of lexical borrowing is an under-researched field in Gaelic language studies. We have suggested various ways in which lexical borrowing has affected Gaelic phonology. Further research along the lines outlined in chapter 8, would go a long way to establishing the nature of 'foreign' influence on Gaelic phonology.

We have also discovered that, with respect to a number of vocalic developments, various types of implicational relationships exist (a) between individual vowels and (b) between consonantal environments. Such implicational relationships suggest possible chronological orders for individual developments, the validity of which can only be tested once these developments have been satisfactorily dated. Given the conservative nature of the Gaelic literary tradition, we can only hope to date individual changes by (a) observing departures 'from tradition and normality' in the manuscript sources (R. L. Thomson 1977); for fruitful examples of this approach, see Jackson (1972), Skerrett (1963, 1966), Ó Baoill (1988) and Breatnach (1994); and (b) studying Gaelic

[4]Shuken (1980) provides an instrumental analysis of stops and sonorants in ScG.

lexical borrowings in non-Gaelic sources and milieus: for examples, see Craigie (1897), O'Rahilly (1930), Breatnach (1990), Taylor (1995), Gillies (1997), Ó Maolalaigh (1997).

This thesis has focused on the historical phonology of the subsystem of short vowels in Gaelic. A similar synthesis is needed for the long vowels and diphthongs, as well as the consonantal system whose main tendencies of development are outlined in chapter 1. Some of the conclusions reached in chapters 1 and 8 suggest new ways of considering the development of the CG consonantal system, in particular the crucial importance of the preceding vowel (a) in the vocalistion of voiced fricatives, and (b) in the various mergers which occurred in the sonorant systems. This latter point coupled with the main findings of this thesis, establishes the inextricable interdependence of consonantal and vocalic systems upon one another in Gaelic, which the historical linguist ignores at his/her peril.